

Spot on Biotechnology Business



From Mind to Market:
Biotechnology Company Directory 2010
North Rhine-Westphalia



100 ml
100 ml
100 ml

40
30
20
10

5:0
ml
5
4
3
2
1
0

5:0
ml
5
4
3
2
1
0

Editorial



Dear Reader,

The global challenges that we face today are being induced by mega-trends such as ageing societies, dwindling fossil resources and global climate change. Reacting to these changes means developing new technologies and processes in areas like personalised medicine, alternative and sustainable energy, and material sciences, as well as in technologies that help reduce energy consumption and CO₂ emissions.

Biotechnology is the cross-industry technology that not only offers an immense potential, but is also playing a crucial role in the development of the necessary global innovative solutions. Over the last decade, biotechnological products and processes have been developed and adopted at a

remarkable speed by traditional industries such as chemicals and pharmaceuticals.

North Rhine-Westphalia (NRW) has a powerful, vivid academic and industrial biotechnology landscape. To present the key players within the industry, the BIO.NRW Cluster Biotechnology North Rhine-Westphalia released the first edition of "Spot on Biotechnology Business" in October 2009. To provide a similar compendium on the academic side of biotechnology in North Rhine-Westphalia, BIO.NRW will be releasing the companion brochure "Spot on Biotechnology Science" in early 2011.

For this second 2010 business edition, seven additional core biotechnology companies have been included in the extended data section, which is again based on the annual company survey conducted by *biotechnologie.de*. By applying the OECD definition of biotechnology as a selective criterion, this approach allows national and international comparisons of business development. The key business figures for 2009 indicate that despite the global financial crisis, the biotechnology sector in NRW has remained robust. NRW's core biotech companies were even able to increase annual turnover by 2.9%, and by generating 42% of Germany's over all core biotech turnover, the impact of NRW's biotech business helped stabilise the nation's growth rate as a whole.

In other exciting developments in the state's academic biotech landscape, the German Center for Neurodegenerative Diseases (DZNE) opened in Bonn, while the first European Protein Research Center (PURE - Protein Research Unit Ruhr within Europe) was established in Bochum. BIO.NRW will present these and many other activities in more detail in "Spot on Biotechnology Science".

The BIO.NRW Cluster has successfully promoted NRW as a biotech hotspot at various international conventions – among them the BIO-Europe 2009, BIO 2010 (Chicago), INDIA BIO 2010 and BIO EXPO Japan 2010. Furthermore, NRW biotech companies were directly supported by activities such as the newly established Business Angel Network BIO.NRW, and the intense encouragement of the cluster for the state-wide call Bio.NRW. In total, EUR 25 million are provided by the state government for innovative R&D projects.

We are convinced that like the first edition, this 2010 issue of "Spot on Biotechnology Business" will serve as a useful compendium of the current situation of the biotech industry in NRW. I would like to cordially invite you to become actively involved in our state's biotech community, and take advantage of our expanding network.

Dr. Bernward Garthoff
Cluster BIO.NRW

*Representative for Biotechnology of the
German State of North Rhine-Westphalia*

© 2010, BIO.NRW "Spot on Biotechnology Business" www.bio.nrw.de

Print: enka-druck GmbH, Berlin
Design and Layout: it's FR!TZ

Picture Source: BIO.NRW

p. 4, p. 5, p. 8, p. 10, p. 14, p. 18, p. 24, p. 42, p. 47, p. 52,

© BIO.NRW; Institute of Biochemistry, University of Cologne,
p. 12, p. 16, p. 32

© BIO.NRW; Max Planck Institute for Molecular Biomedicine, Muenster

Picture Source:

p. 48 © fotolia, p. 51 © Deutsche Saatveredelung AG, p. 54 © Dieter
Brockmann - fotolia.com, p. 56 © Jürgen F. - fotolia.com
p. 58 © Duesseldorf Marketing & Tourismus

Content

Editorial	5	Company Directory 2010 NRW	
Content	7	Non-specific Services	24
Spot on Biotechnology Business	9	Health and Medicine (including Animal Health)	32
Biotech Landscape	9	Industrial Biotechnology	42
Stimuli for start-ups	9	Agrobiotechnology	48
Academic Biotech Research	11	Bioinformatics	52
Biotech Business	11	BIO.NRW Cluster Biotechnology North Rhine-Westphalia	55
Competence Clusters	17	Contact BIO.NRW	55
Industrial Biotechnology – CLIB ²⁰²¹	17	Glossary: OECD Definitions	57
Pharmaceutical Biotechnology – BIO.NRW.red	17	Organisation for Economic Co-operation and Development (OECD)	57
From Mind to Market	19	Biotechnology company	57
Sources, Literature, Links	19	Dedicated biotechnology companies	57
Biotechnology Map of North Rhine-Westphalia Life Science Technology Parks and Incubators	21	Other biotechnologically active companies	57
Biotechnology Map of North Rhine-Westphalia Dedicated and other biotechnologically active companies	22	Business Areas of Activity	57



Spot on Biotechnology Business

Biotech Landscape

North Rhine-Westphalia (NRW) is at the heart of Europe. 150 million people – a third of the population of the European Union – live within a day's drive of Duesseldorf, the state capital. A quarter of the direct foreign investment that flows into Germany ends up in North Rhine-Westphalia, and it is the number one exporter among Germany's 16 federal states. If NRW were classified as an independent exporting nation in its own right, it would rank 17th in the world in terms of size – in the same league with countries like the Netherlands¹. With 18 million inhabitants of which 10 million live in the Rhine-Ruhr area that lists among the top 30 metropolitan areas in the world, NRW is by far the most populous German state. Consequently, the state is offering the highest level of infrastructure within Germany including the country's densest railway network and seven international airports.

Traditionally, North Rhine-Westphalia has been Germany's most important location for the pharmaceutical and chemical industry. For the latter sector, 32 percent of the country's turnover is generated in NRW. Today, the state has also developed into a life science hotspot: A good reason for many top-level biotechnology companies and research institutes to have their headquarters here. Numerous successful start-up and spin-off companies are flourishing in NRW alongside a strong chemical and pharmaceutical industry that includes many well-known household names like Bayer HealthCare, Bayer CropScience, Evonik, Henkel, Grünenthal, and UCB. This business excellence is endorsed by a dense network of outstanding academic institutions, which

are focussing on biotechnology within a broad life sciences landscape. In addition, there is an equally rich and robust funding environment to support and promote the industry, including venture capital providers and business development organizations. Biotechnology in NRW represents an active, multicentric network which is setting the pace for the powerful pulse of the state's life science business.

While biotechnology is a relatively young industry, it is expanding rapidly. Its innovative technologies are applied to major industry branches serving health/medicine, chemistry, food and environment. North Rhine-Westphalia began developing into a hotspot for biotechnology in 1995. 15 years into the program, around 300 life science-related companies are located here – among them more than 80 biotechnology enterprises including several global players (Figure 1).

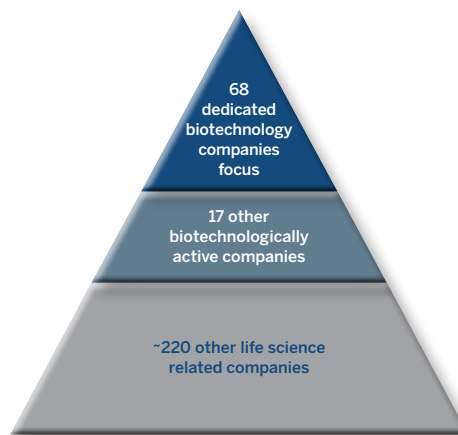


Fig. 1: Life Science Company Landscape in North Rhine-Westphalia

Major business areas covered are industrial, nano- and pharmaceutical biotechnology, and there is a focus on enabling technologies and supporting services as well.

Stimuli for start-ups

Many of today's successful young biotech companies started as university spin-offs. They took advantage of life science incubators and technology centers, whose existence can be pivotal for a start-up company. As catalysts for regional infrastructure and economic development, there are more than 55 such centers and incubators in the immediate vicinity of universities and basic research institutions in NRW. They support technology transfer all the way from mind to market. In 2009, a total of 94 biotech companies were incubated by 17 of these technology centers². You will find their locations and the number of biotech companies they host on the map on page 20.

The services these start-up centers provide include renting affordable laboratory and office space, mediating business contacts, consulting on funding opportunities, and advising on either founding or relocating a firm. Business-plan competitions are offered as an additional chance for support. One technology park that deserves to find special mention here is BioCampus Cologne, one of the largest of its type in Germany. It houses more than 23,000 square meters of laboratory and office space, and industrial production facilities on a site totalling more than 25 hectares. Company founders, young entrepreneurs and scientists all profit from NRW's highly-networked biotechnology scene.

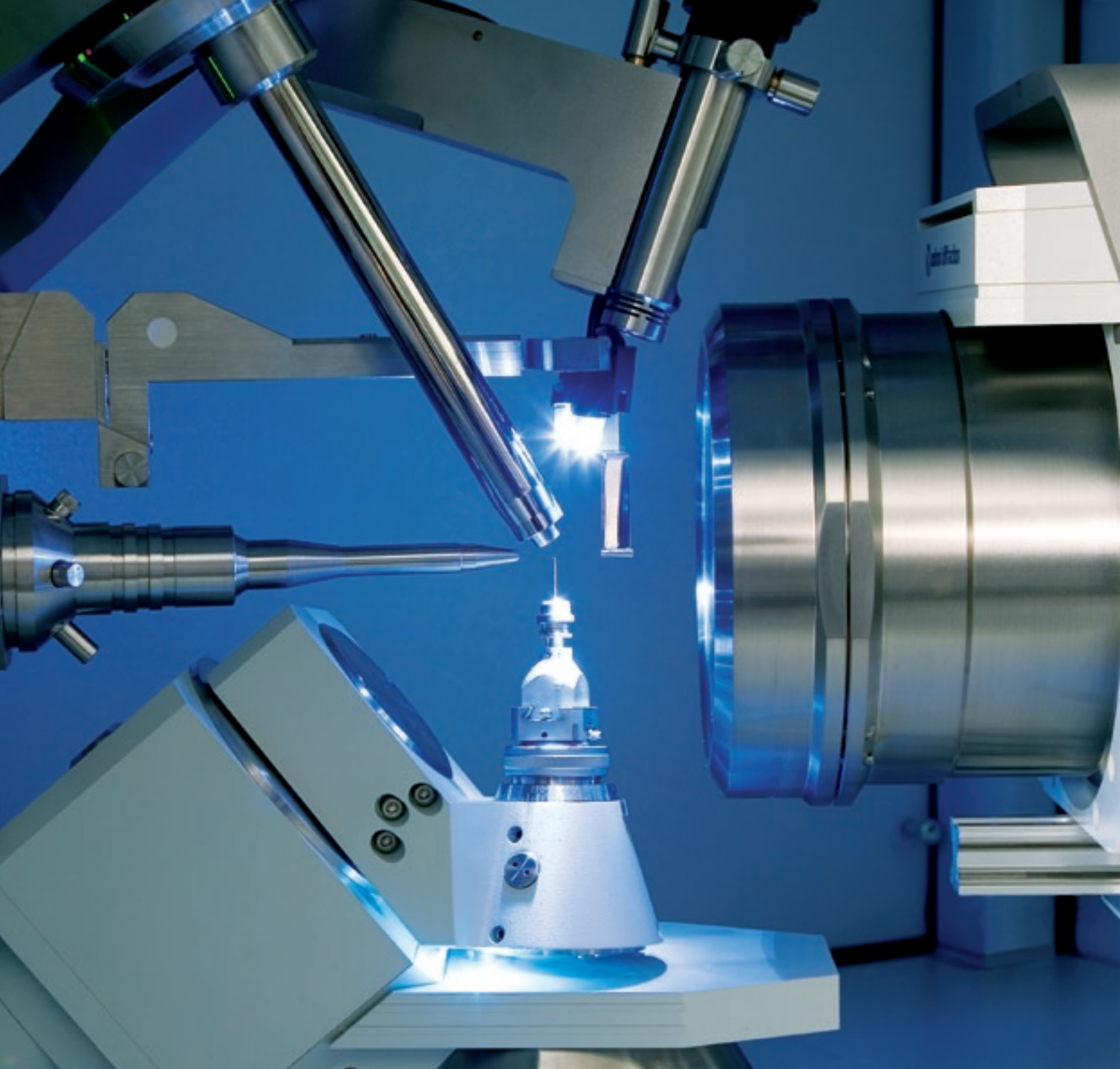
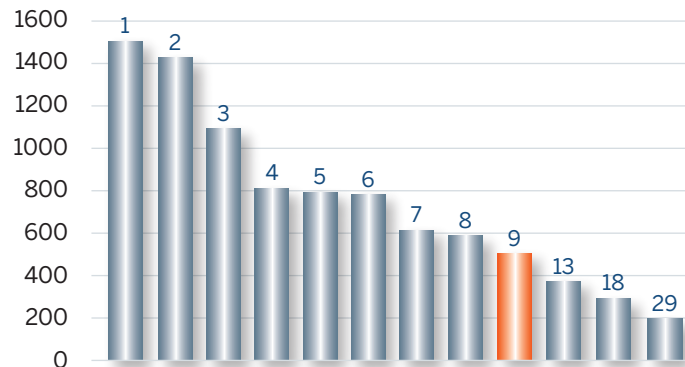


Fig. 2: Top Regions in Biotechnology Patent Applications (Number of PCT Patents)

1.	San Jose-San Francisco-Oakland	1510
2.	Boston-Worcester-Manchester	1422
3.	New York-Newark-Bridgeport	1090
4.	Washington-Baltimore-N.Virginia	811
5.	Tokyo	792
6.	San Diego-Carlsbad-San Marcos	782
7.	Los Angeles-Long Beach-Riverside	613
8.	Philadelphia-Camden-Vineland	587
9.	North Rhine-Westphalia	506
13:	Bavaria	375
18:	Baden-Wuerttemberg	294
29:	Berlin	198



Academic Biotech Research

North Rhine-Westphalia is offering Germany’s most comprehensive network of academic institutions consisting of internationally renowned Universities and Universities of Applied Sciences (60; 22 with life science activity), Max Planck Institutes (12), Fraunhofer Institutes (16), Helmholtz Institutes (4) and Leibniz Institutes (11). One quarter of all German students are taking advantage of this excellent environment for science and education and are pursuing their studies in NRW.

University centres can be found in Aachen, Bonn, Cologne, Duesseldorf, Muenster, Bochum, Essen, Dortmund, Bielefeld, and other cities in the state. In the area of biotechnology, specializations in cell biology/medicine, biochemistry, proteomics, metabolomics, molecular biology, analytics/microsystems, bioinformatics and process engineering are all on offer.

For over a decade, NRW has been the leading German region in stem cell research and development with Muenster, Bonn and Cologne as hotspots. In the field of plant genetics, the Max-Planck-Institute for Plant Breeding Research, Cologne deserves to be called the “cradle of plant

biotechnology” in Germany as the first plant transformation technologies were developed here.

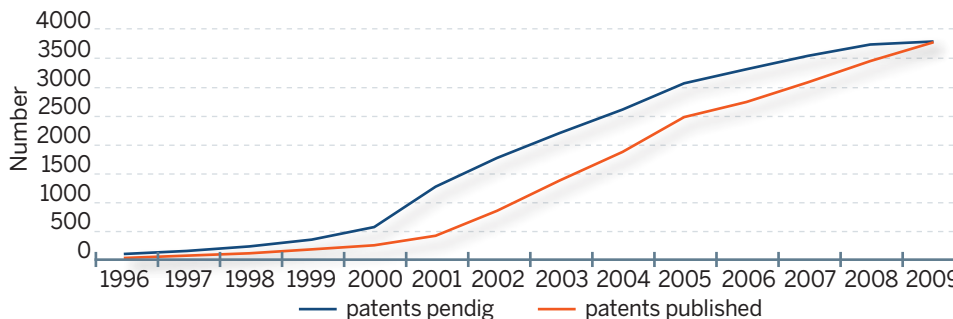
Two recent examples emphasizing the very dynamic development of NRW as a research location are the German Centre for Neurodegenerative Diseases (DZNE) and the Protein Research Unit Ruhr within Europe (PURE). The former was officially opened as a federal Helmholtz Center in 2009 in Bonn, after the city won a fierce competition against renowned scientific contenders in Munich, Berlin, and Heidelberg. The latter started as the first European Protein Research Institute in Bochum with a financial support of EUR 37 million.

BIO.NRW will offer detailed information about the academic life science landscape in NRW in its upcoming new brochure “Spot on Biotechnology Science”.

Biotech Business

According to the “OECD Biotechnological Statistics 2009” report, North Rhine-Westphalia is Europe’s most innovative biotechnology region: It generates more biotech PCT patent applications than any other European region (Figure 2)³. The development of biotech innovations from NRW has been constantly increasing: 3791 biotech patents have been filed in total between 1996

Fig. 3: Biotechnology Patent Development in NRW





and 2009 by NRW biotech companies and research facilities of which 3777 have been published (Figure 3)⁴.

Based on the OECD definition (see page 57), 68 dedicated biotech companies were operating in NRW in 2009. Their activities were complemented by 17 other companies with a biotechnological commitment, mostly global players in the field of pharmaceuticals, chemicals or seed production. Since these companies are active in many diverse areas, their biotech related business figures cannot be calculated exactly and are not included in the following statistics. The real economic impact of biotechnology in NRW is therefore higher than these statistics reveal. The following analysis is performed in cooperation with *biotechnologie.de* (using data from their annual company survey)⁵ and focuses on dedicated biotechnology companies exclusively. These companies are at the innovative core of biotechnological research and development. The business figures of the 68 NRW dedicated biotech companies are set into comparison with the 531 German dedicated companies and the 463 German companies without the NRW contribution, respectively.

In NRW about 3300* people (15.000 nationwide) were employed by dedicated biotech companies in 2009 and generated a turnover of approximately EUR 1.15 billion* (Table). According to the national company survey by *biotechnologie.de* the NRW dedicated biotechnology companies generated 42 percent (EUR 925 million) of the German annual turnover (EUR 2.18 billion) in this sector which accounts for a plus of 2.5 percent compared to 2008. In NRW the annual turnover increased by 2.9 percent in 2009 compared to 2008, whilst in the same period the turnover of all German biotech companies stagnated. Without the contribution of NRW's biotech companies, the turnover in 2009 of the Ger-

Table: Key Figures for the Biotechnology Industry of North Rhine-Westphalia

68 dedicated biotechnology companies in 2009 (61 in 2008)				
	2008	2009	2008	2009
Number of employees	3,100 (n=59)	3,210 (n=61)	3,200	3,300
Turnover	EUR 898,3 million (n=35)	EUR 925 million (n=28)	EUR 1,100 million	EUR 1,150 million
R&D expenditure	EUR 191 million (n=33)	EUR 190 million (n=29)	EUR 210 million	EUR 230 million
	based on survey <i>biotechnologie.de</i>		based on survey & own estimates	

man biotech sector would have dropped by 2.7 percent.

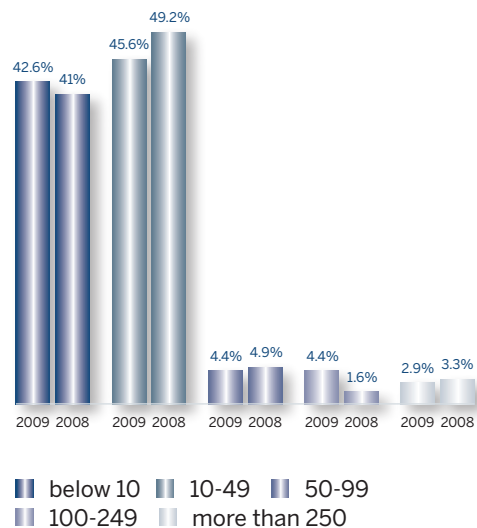
EUR 190 million – an equal amount compared to 2008 – was reinvested into R&D projects. Thus, the research and development investment of the dedicated biotech companies still remains at a high level despite the global financial crisis. The proportional expenditure of 20.6% of the annual turnover is five times higher than the mean of all other businesses in Germany.

The figures reflect that biotechnology is a new business sector. The average biotech company in NRW has been in operation for 8.4 years meaning that many of those companies are in an early phase of their activities. Despite the 2009 crisis the employee structure remains almost unchanged compared to 2008: about 88 percent of the biotechnology companies in NRW employ fewer than 50 people and 94 percent of the companies have less than 100 employees, respectively (Figure 4).

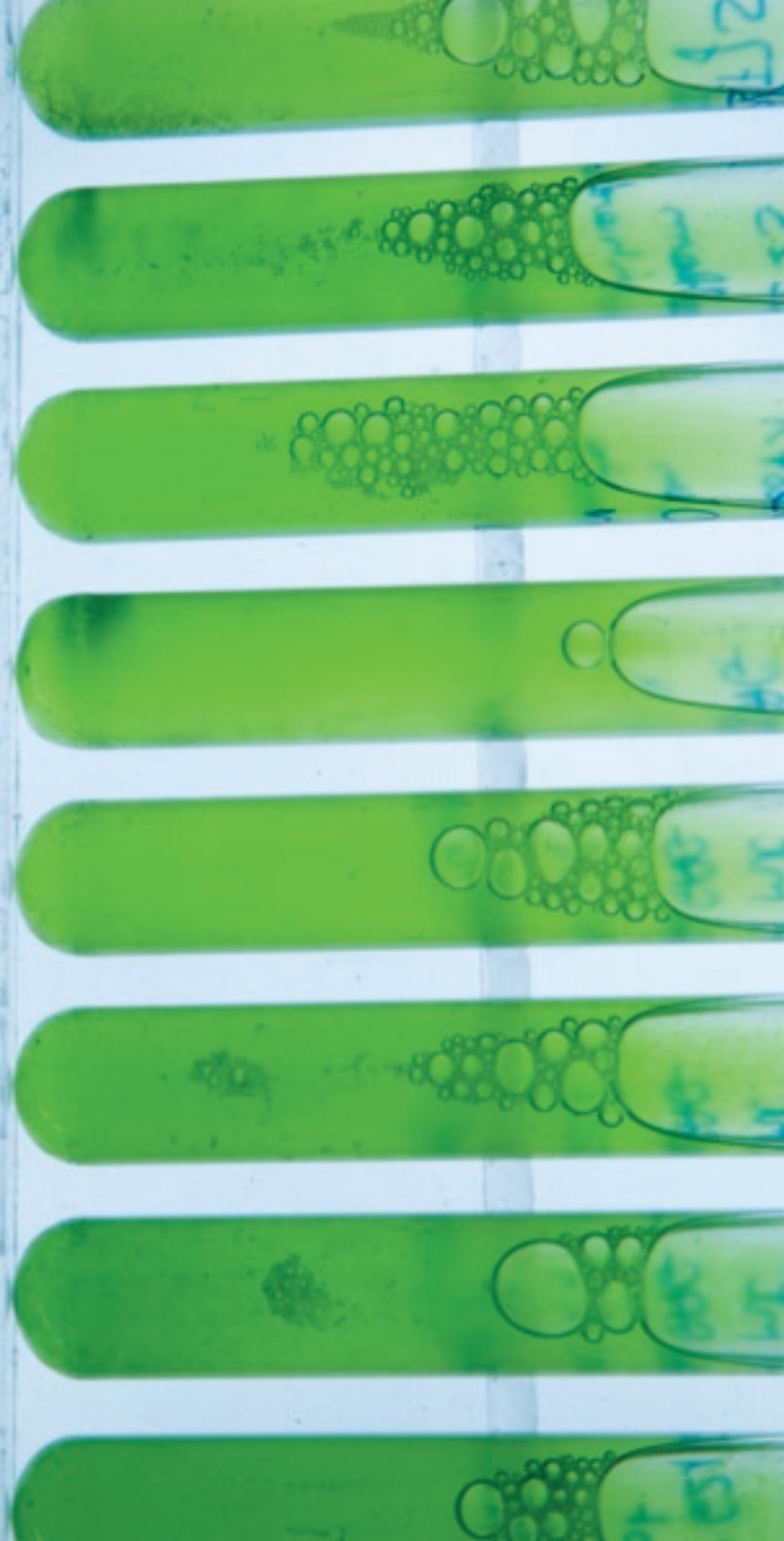
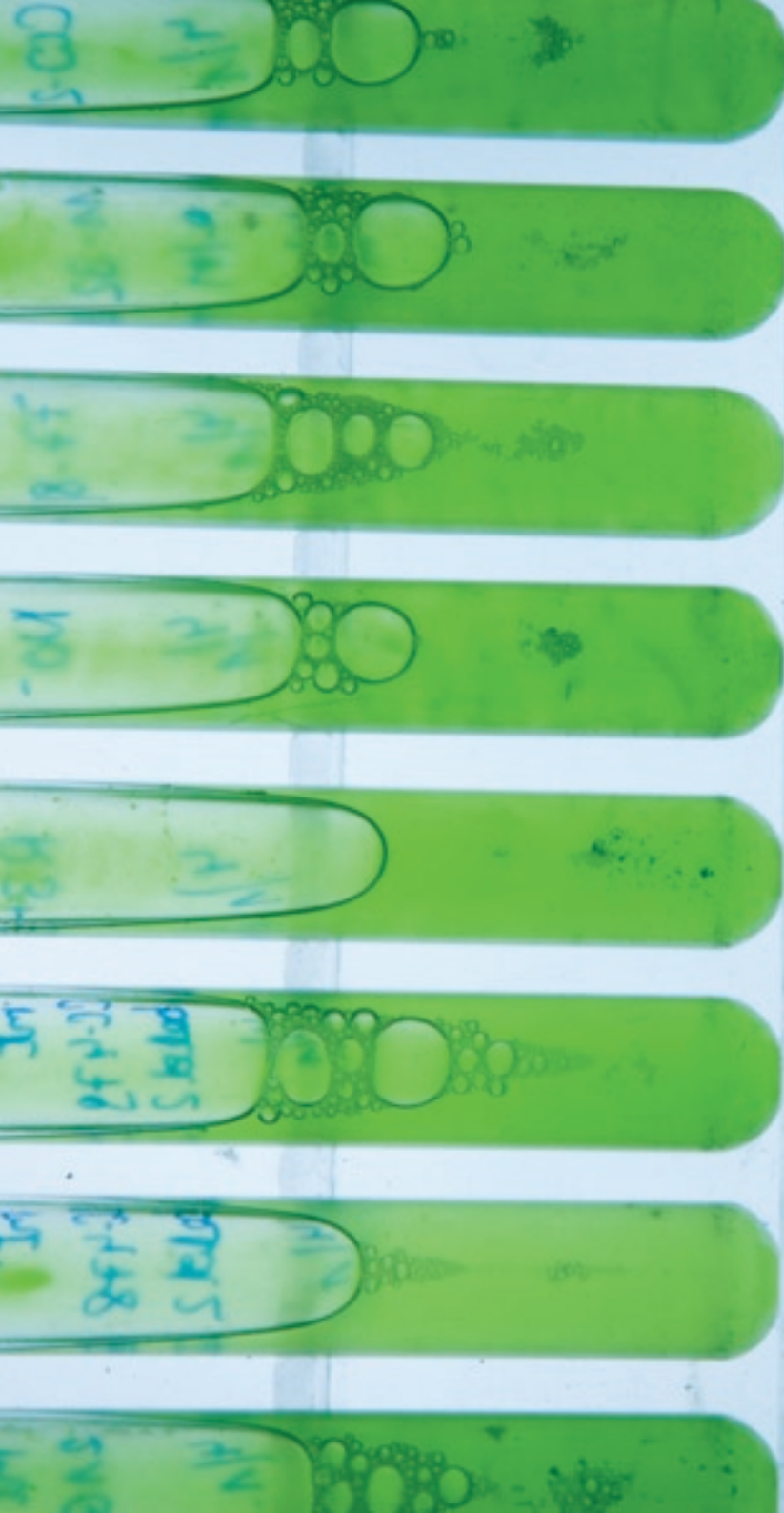
North Rhine-Westphalia's biotech companies were able to increase the amount of grant money from EUR 7 million in 2008 to EUR 9.7 million in 2009. In the same period, their venture capital almost doubled from EUR 9.6 million to EUR 17.8 million. Despite the difficult global economic situation none of NRW's biotech companies became insolvent in 2009.

About 38 percent (42 percent in 2008) of the biotech companies in North Rhine-Westphalia are active in multiple branches (Figure 5). These biotechnology companies with "non-specific business activities" include service providers and suppliers for the industry. Among them are the two largest biotech companies of NRW, Qiagen GmbH and Miltenyi Biotec GmbH, who have specialized in offering "enabling technologies".

Fig. 4: Size of Dedicated Biotechnology Companies (Number of Employees)



* based on the 04/2010 company survey and additional data



Qiagen began as a spin-off from the University of Duesseldorf in 1984. Today, the company employs more than 3,000 experts at 30 sites worldwide, and has become the leading provider of sample technology and a top player in molecular diagnostics. Qiagens latest investment of EUR 30 million into their headquarter and site of production, research and administration in Hilden near Duesseldorf started in 2008, aims to ensure long-term growth and creates another about 500 jobs on-site.

Based on the invention of a magnetic cell separation technology, Miltenyi Biotec was founded 1989 in Bergisch Gladbach near Cologne. Since then, the company has expanded to more than 1,100 employees worldwide who produce and market over 1,400 products for the global biomedical research community. It is remarkable that this success has been solely achieved by generic growth.

Companies which are active in the field of health and medicine developing new drugs or diagnostics within the pharmaceutical sector accounted for 37 percent of NRW's dedicated biotech companies in 2009 (versus 31 percent in 2008) The relative growth of this sector is caused by the inclusion of six new companies with a pharmaceutical focus into the survey of *biotechnologie.de*. At the time of the editorial deadline of this brochure the dedicated biotech companies in the field of the health and medicine had developed a drug pipeline of in total 36 products and candidates, respectively. The detailed distribution by indication lists "skin and subcutaneous diseases" and "infectious and parasitic diseases" as the top categories (Figure 6). The product development stages from discovery to market entry include 11 therapeutics (30%) in clinical phase I-III. (Figure 7)⁶.

With 16 percent – compared to 9.6 percent of companies in this sector across Germany – industrial biotechnology re-

Fig. 5: Areas of activity/percent

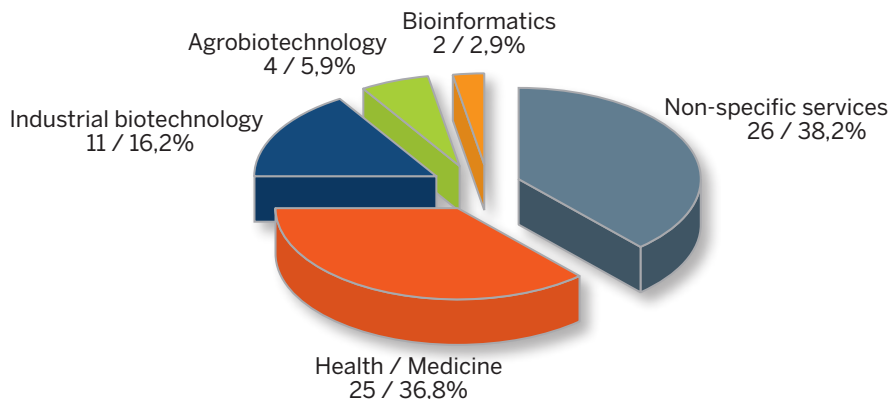


Fig. 6: Drug Development Pipeline by Indication

Indication	Number of Products
Skin and subcutaneous tissue	8
Infectious and parasitic diseases	6
Diseases of the nervous system	6
Neoplasms / cancer / oncology	4
Other	3
Genitourinary system	2
Diseases of the blood and blood-forming organs; immune disorders	2
Injury, poisoning and certain other consequences of external causes	1
Cardiovascular	1
Digestive system	1
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	1
Endocrine, nutritional and metabolic diseases	1
Total	36



mains a characteristic strength of NRW. The underlying classification refers to companies that develop enzymes, biomaterials or bioprocesses, which can be applied to facilitate or enable large-scale production in the chemical industry. The NRW-based companies Henkel and Evonik have been pioneering industrial biotechnology worldwide and are still its pacesetters.

In 2009, several NRW companies successfully closed international acquisitions: Qiagen bought UK based DxS Ltd. to strengthen their market position in the area of diagnostics and companion diagnostics. Qiagen also acquired SABiosciences – a US company specializing in PCR assay development. In both cases, the original company names and sites were preserved. Bayer Schering Pharma closed a deal with Prometheus Laboratories in San Diego in early 2010: It gives Bayer access to Prometheus' platform for tumor diagnostics. Bayer Crop Science bought US-based Athenix Corporation for USD 400 million to gain access to their herbicide tolerance and insect control trait development platform as well as to the largest collection of Bt genes in the industry – genes that are essential for insect resistance of plants. Neuraxo Biopharmaceuticals GmbH, Erkrath, was renamed to Spinal Cord Therapeutics GmbH (SCT), and remain focussed on developing innovative treatments for spinal cord and brain injuries. Three biotech companies were founded since the first edition of this brochure in NRW: Orphatec Pharmaceuticals GmbH (Niederkassel), B&S Analytik GmbH (Dortmund) and DeklaTec GmbH (Aachen).

Competence Clusters

Besides the large number of biotech companies which have specialized in enabling technologies, two main fields of activity characterize the biotechnology landscape in

North Rhine-Westphalia: Industrial biotechnology and pharmaceutical biotechnology.

Industrial Biotechnology – CLIB²⁰²¹

Industrial Biotechnology is paving the way towards a sustainable chemistry because it utilizes renewable resources. It can be crucial to create a healthy future economy because it helps to produce novel materials and active ingredients for many areas of life. Today, however, industrial biotechnology is globally involved in producing less than 10 percent of all chemicals, while approximately 70,000 chemical products – generating sales of around USD 1.5 trillion – are still produced from fossil sources. Assuming that two thirds of all chemicals could be manufactured from renewable materials⁷, some 50,000 products could be newly developed and commercialized by means of industrial biotechnology – an immense long-term opportunity.

The Cluster Industrial Biotechnology, CLIB²⁰²¹, started its operation in March 2007 at its headquarters in Duesseldorf, and today comprises more than 75 national and international members from leading universities, small and medium enterprises and top-tier chemical companies and organiza-

tions. In its network, CLIB²⁰²¹, oversees and organizes all parts of the industrial value chain – research, development, production and commercialization. CLIB²⁰²¹ is able to heavily support R&D efforts of its members: As of June 2010, EUR 44 million has been invested into respective projects. Thus, new processes and products based on biotechnology are accelerated and enabled to enter the market significantly faster.

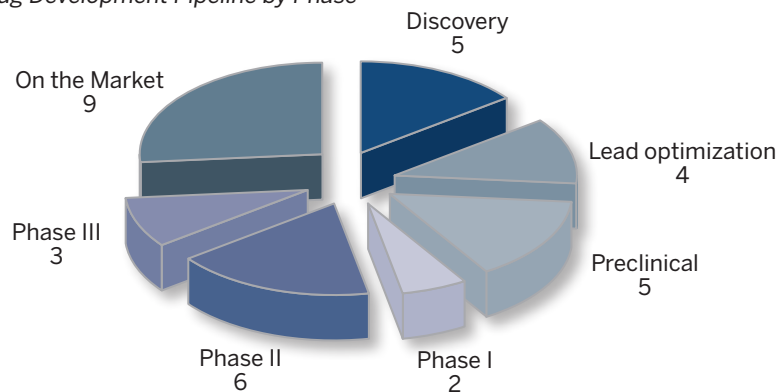
CLIB²⁰²¹ addresses several key areas of innovation like “polyomics”, strain development, fermentation, biocatalysis and expression, downstream processing, carbon source transformation and biotechnological intermediates. The cluster supports R&D consortia, cooperation partners, entrepreneurs and young researchers to bring biotechnological innovations to the market.

With its goal to turn research results most effectively into commercially successful innovation, CLIB²⁰²¹ is aspiring to become the leading European cluster in industrial biotechnology.

Pharmaceutical Biotechnology – BIO.NRW.red

In the last decades, major milestones in the progress of medicine and healthcare have

Fig. 7: Drug Development Pipeline by Phase*



* N/A: 2



been achieved by the application of pharmaceutical (“red”) biotechnology, namely in the development of drugs, vaccines and diagnostics. With a yearly growth rate of 18 percent worldwide, the biopharmaceutical market is developing twice as fast as the residual pharmaceutical market. Its market size is estimated to be USD 100 billion in 2010.⁸ In Germany, the sales of biopharmaceuticals increased by 5.4 percent to about EUR 4.7 billion in 2009. This corresponds to 16 percent of the total pharmaceutical market in Germany. In 2009, 241 of all 531 dedicated German biotech companies (45 percent) were active in red biotechnology. 468 biopharmaceuticals had already reached clinical development, while 12 out of 44 newly approved drugs in Germany were biopharmaceuticals.⁹

For more than a century, North Rhine-Westphalia has been the heartland of Germany’s pharmaceutical industry. The state houses a significant number of companies that develop pharmaceuticals and has an exceptional standard in biotechnological and medical education. This advantage, combined with the enormous market potential of biopharmaceuticals, inspired BIO.NRW’s strategic initiative in the field of red biotechnology called BIO.NRW.red. Its starting point was the competition “Bio.NRW 2009”, announced by NRW’s Ministry of Innovation, Science, Research and Technology to foster the formation of consortia between academia and biotech companies.

The successful projects can be grouped into the following main categories: development of drugs (biologicals and small molecules), generation of new methods in diagnostics, establishment of biomarkers and introduction of new biopharmaceutical processes – based on cell cultures for example.

The further development of BIO.NRW.red will include regular meetings to nurture and

maintain the dialogue between experts in science and business as well as specific strategies to improve the financial support for start-up companies and small and medium enterprises in the field.

The overall aim of the BIO.NRW.red initiative is to build up a sustainable network that connects all important players in the field of medicine, healthcare, pharmaceutical industry and red biotechnology.

From Mind to Market

This chapter provides an overview of 58 of the dedicated and 10 of the other biotechnologically active companies from North Rhine-Westphalia as classified following the OECD guidelines. For convenience, the companies are grouped in five areas according to their main business:

- Non-specific Services
- Health and Medicine (including Animal Health)
- Industrial Biotechnology
- Agri/Agrobiotechnology
- Bioinformatics

For a more comprehensive directory that includes all life science companies in NRW, please visit our company database at www.bio.nrw.de/firmendatenbank.

BIO.NRW invites you to discover North Rhine-Westphalia’s biotechnology community!

Sources, Literature, Links

- [1] http://www.nrwinvest.com/nrwinvest_deutsch/NRW_im_Ueberblick/
- [2] Analysis by BIO.NRW
- [3] OECD Biotechnology Statistics 2009, B. van Beuzekom and A. Arundel

[4] NRW PCT Biotech Patent Analysis by BIO.NRW

[5] <http://www.biotechnologie.de/>

[6] <http://www.biotechgate.com>; Venture Valuation, Zurich, CH

[7] Industrial Biotechnology (2009); Jarell, K. A.: Synthetic biology and the sustainable chemistry revolution. (5) No. 4

[8] Moderne Biotechnologie-Chancen für Deutschland und Gestaltungsauftrag für die IG BCE; www.igbce.de/portal/site/igbce/rote_biotechnologie

[9] BCG Report Medizinische Biotechnologie in Deutschland 2010 – Nutzen von Biopharmazeutika für Kinder; Dr. A. Heinemann, Dr. D. Michel; www.vfa-bio.de/vb-de/vb-presse/vb-publikationen

The Netherlands

Weser

5 Bielefeld

16 Muenster
17

2 Ascheberg

Ems

Lippe

15 Marl

7 Boenen

Dortmund

6 Bochum

11

Ruhr

18 Wuppertal

Duesseldorf

12

Bergisch-Gladbach

4

Cologne

3 Baesweiler

13 Juelich

14

Herzogenrath

Aachen

9

10

Rhine

Bonn

8

Belgium

Germany



Biotechnology Map of North Rhine-Westphalia

Life Science Technology Parks and Incubators

Name	City	Number of Companies*	Homepage
① Medizintechnisches Zentrum MTZ Aachen	Aachen	2	www.agit.de
② INCA Technologiezentrum Ascheberg	Ascheberg	2	www.inca-technologiezentrum.de
③ its - Internationales Technologie- und Service-Center Baesweiler	Baesweiler	7	www.its-center.de
④ Technologiepark Bergisch-Gladbach	Bergisch-Gladbach	1	www.tb.g.de
⑤ Technologiezentrum Bielefeld	Bielefeld	2	www.wege-bielefeld.de
⑥ TZR - Technologiezentrum Ruhr	Bochum	4	www.chip-tzr.de
⑦ Bio-Security	Boenen	1	www.bio-security.de
⑧ life science Inkubator	Bonn	1	www.life-science-inkubator.de
⑨ BioCampus Cologne	Cologne	11	www.biocampuscologne.de
⑩ RTZ - Rechtsrheinisches Technologie- und Gründerzentrum Köln	Cologne	6	www.rtz.de
⑪ BMZ - BioMedizinZentrum Dortmund	Dortmund	19	www.bmz-do.de
⑫ LSC - Life Science Center Düsseldorf	Duesseldorf	21	www.lcs-dus.de
⑬ TPH Technologie Park Herzogenrath	Herzogenrath	2	www.tph.de
⑭ Technologiezentrum Jülich	Juelich	2	www.tz-juelich.de
⑮ Technologie- und Chemiezentrum Marl	Marl	1	www.technomarl.de
⑯ BioZ - Biotechnologiezentrum Münster	Muenster	8	www.technologiefoerderung-muenster.de
⑰ CeNTech - Center for Nanotechnology	Muenster	2	www.centech.de
⑱ Pharma- und Chemiapark Wuppertal	Wuppertal	2	www.pharma-und-chemiepark.de

* Life Science Companies

Biotechnology Map of North Rhine-Westphalia

Dedicated and other biotechnologically active companies



Dedicated companies¹

AiCuris GmbH & Co. KG	Wuppertal	p. 33
arrows biomedical Deutschland GmbH	Muenster	p. 33
ARTES Biotechnology GmbH	Langenfeld	p. 25
Autodisplay Biotech GmbH	Duesseldorf	p. 43
AVENTRA GmbH	Boenen	
Axiogenesis AG	Cologne	p. 25
Bibitec GmbH	Bielefeld	p. 25
Bio-Mar GbR	Duesseldorf	p. 26
BioCheck GmbH	Muenster	p. 34
Biofrontera AG	Leverkusen	p. 34
Bioreact GmbH	Troisdorf	p. 43
BioSolveIT GmbH	Sankt Augustin	
bitop AG	Witten	p. 43
BSV Bioscience GmbH	Baesweiler	p. 26
Carpegen GmbH	Muenster	p. 34
CellAct Pharma GmbH	Dortmund	p. 35
CELONIC GmbH	Juelich	p. 26
Cevac Pharmaceuticals GmbH	Cologne	p. 27
Charles River Biopharmaceutical Services GmbH	Erkrath	p. 27
Chembiotech Seela + Partner	Muenster	
Chimera Biotec GmbH	Dortmund	p. 27
CIBUS Biotech GmbH	Rheda-Wiedenbrueck	p. 28
Cilian AG	Muenster	p. 44
CIRES cell & immune research services	Dortmund	p. 35
Coley Pharmaceutical GmbH A Pfizer Company	Duesseldorf	p. 35
DIREVO Industrial Biotechnology GmbH	Cologne	p. 44
evocatal GmbH	Duesseldorf	p. 44
GEN-IAL GmbH	Troisdorf	p. 45
InBio GbR	Krefeld	
Informium AG	Leverkusen	p. 53
Institut fuer Innovationstransfer GB Biotech	Bielefeld	p. 28
InterMed Discovery GmbH	Dortmund	p. 28
Lead Discovery Center GmbH	Dortmund	p. 36
Life & Brain GmbH	Bonn	p. 36
Lonza Cologne AG	Cologne	p. 29
m2p-labs GmbH	Aachen	p. 46
Matricel GmbH	Herzogenrath	p. 37
MBBL Dr. Bartling GmbH	Bielefeld	
miacom diagnostics GmbH	Duesseldorf	p. 37
MILTENYI BIOTEC GmbH	Bergisch Gladbach	p. 29
multiBIND biotec GmbH	Cologne	p. 46
MykoMax GmbH	Wuppertal	p. 49
Nexigen GmbH	Bonn	p. 37
Orphatech Pharmaceuticals GmbH	Niederkassel	p. 38

PAION AG	Aachen	p. 38
PharmedArtis GmbH	Aachen	p. 39
Phytowelt GreenTechnologies GmbH	Nettetal	p. 50
PlasmidFactory GmbH & Co. KG	Bielefeld	p. 29
Protagen AG	Dortmund	p. 30
Protectimmun GmbH	Bochum	p. 39
QIAGEN GmbH	Hilden	p. 30
Rhein Biotech GmbH (Dynavax Europe)	Duesseldorf	p. 39
Saaten-Union BIOTEC GmbH	Leopoldshoehe	p. 50
SanguiBioTech GmbH	Witten	p. 40
SCT Spinal Cord Therapeutics GmbH	Erkrath	p. 40
Sibion Biosciences GmbH	Bonn	
Spintec Engineering GmbH	Aachen	p. 40
Squarix GmbH	Marl	p. 30
TaconicArtemis GmbH	Cologne	p. 41
vivo Science GmbH	Gronau	p. 31
W42 Industrial Biotechnology GmbH	Marl	p. 46
Warburg Glycomed GmbH	Erkrath	p. 41
X-Zyme GmbH	Duesseldorf	p. 47
XanTec bioanalytics GmbH	Duesseldorf	p. 31

Other biotechnologically active companies²

BAYER CropScience	Monheim	p. 49
Bayer Schering Pharma AG	Wuppertal	p. 33
Cognis Deutschland GmbH & Co. KG	Duesseldorf	
Evonik Degussa GmbH	Marl	p. 45
Girindus AG	Bergisch Gladbach	
Grüenthal GmbH	Aachen	p. 36
Henkel AG & Co. KGaA	Duesseldorf	p. 45
Janssen-Cilag GmbH	Neuss	
MEDIWISS Analytik GmbH	Moers	
Monsanto Agrar Deutschland GmbH	Duesseldorf	p. 49
Octapharma GmbH	Langenfeld	
PHARMA WALDHOF GmbH	Duesseldorf	p. 38
Plant Science Services GmbH	Westerkappeln	p. 50
Syngenta Seeds GmbH	Bad Salzuflen	
UCB GmbH	Monheim	p. 41
W. von Borries-Eckendorf GmbH & Co. KG	Leopoldshoehe	p. 51
Wyeth-Pharma GmbH	Muenster	

¹ due to 2010 relocation and insolvencies the number of dedicated companies before printing was 64

² OECD Definition page 46



Non-specific Services



Artes Biotechnology is an independent German biotech company providing innovative solutions in recombinant protein production.

We offer our technology and know-how to establish reliable and competitive processes for the production of biosimilars and for new targets. Our approaches in genetic engineering, up- and downstream process

development and set-up of analytical assays contribute to the successful market introduction of several products worldwide. WHO recommendation, international registration, FDA approval and GRAS certification are part of the track record achieved in international collaborations.

Artes' team has more than 20 years experience in contract R&D, project management and in the set-up of manufacturing processes. Together with our network of international strategic partners we provide customized service packages for your recombinant product.

Name	Artes Biotechnology GmbH
Address	Elisabeth-Selbert-Str. 9
Postal Code/City	40764 Langenfeld
Fon	+49-2173-275-870
Fax	+49-2173-275-8777
Internet	www.artes-biotechnology.com
Employees	18
Founded (year)	2002



The business objective of Axiogenesis lies in the area of clinical (red) biotechnology, specifically in the production of stem cell based assays and customized cell lines that enable drug development.

These innovative and proprietary assays accelerate and improve drug candidate selection, lower costs and thus increase

overall drug development efficiency. At present the main focus is heart muscle disease (hypertrophy).

Axiogenesis assays are based on pure, in vitro differentiated, stem cell derived cardiomyocytes and endothelial cells. Axiogenesis CRO services include cardiac specific cytotoxicity, embryotoxicity and human cardiac MEA.

Axiogenesis has included induced pluripotent stem cell (iPS) technology. Both human iPS and murine iPS derived cells as well as murine ES derived cells are now part of the Axiogenesis portfolio.

Name	Axiogenesis AG
Address	Nattermannallee 1
Postal Code/City	50829 Cologne
Fon	+49-221-998818-0
Fax	+49-221-998818-10
Email	info@axiogenesis.com
Internet	www.axiogenesis.com
Employees	24
Founded (year)	2000



BIBITEC is a contract manufacturing organization (CMO) specialized in the production of proteins and monoclonal antibodies derived from mammalian cells for use in preclinical and clinical trials.

Name	Bibitec GmbH c/o University of Bielefeld
Address	Universitaetsstrasse 25
Postal Code/City	33615 Bielefeld
Fon	+49-521-106-6326
Fax	+49-521-106-6328
Internet	www.bibitec.de
Employees	9
Founded (year)	2001

Name	Bio-Mar GbR
Address	Merowingerplatz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-3367-543
Fax	+49-211-3367-545
Email	all@bio-mar.de
Internet	www.bio-mar.de
Founded (year)	2003



BIO-MAR was founded with the mission to discover, develop and supply new bioactive compounds from marine microorganisms.

The company has a dynamic collection of over 100 marine microorganisms exhibiting a diverse range of bioactivities and work in different therapeutic areas, focusing efforts in cancer and antibiotics. BIO-MAR's internal operations structure includes two

units: The Microbial Biotechnology unit is devoted to the isolation and cultivation of rare marine microorganisms and the Biological Chemistry unit is devoted to discover new candidates to drugs and to assess their pharmacological value.

Name	BSV Bioscience GmbH
Address	Max-Planck-Strasse 12
Postal Code/City	52499 Baesweiler
Fon	+49-2401-805-350
Fax	+49-2401-805-355
Email	buero@bsvbio.de
Internet	www.bsvbio.de
Employees	13
Founded (year)	2007



BSV BioScience GmbH is a daughter company of the Indian Pharma-Enterprise – Bharat Serums & Vaccines Ltd. The German branch was founded in Oct. 2007 and is located in Baesweiler, near the historical city of Aachen.

Since June 2010, the company manufactures and markets biological, pharma-

ceutical active ingredients for different therapeutic areas. One of our key strengths is based on the production of fertility hormones, being supplied as API or finished injectables as well, in cooperation with a German license manufacturer.

BSV BioScience GmbH is focused on different R&D activities, pursuing improvements in the field of API's and finished dosage forms continuously.

Name	Celonic GmbH
Address	Karl-Heinz-Beckurts-Str. 13
Postal Code/City	52428 Juelich
Fon	+49-2461-6905-76
Fax	+49-2461-6905-79
Email	info@celonic.com
Internet	www.celonic.com
Employees	17
Founded (year)	1998



Celonic is a 12 years old company serving the global biotech and pharma industry. It maintains analytical laboratories in Juelich, Germany, and a GMP facility in Basel, Switzerland. Celonic has a strong research background in cell biology. The company provides GxP analytical services, cell line

development, process development and GMP production of biopharmaceuticals.

In the analytical field, Celonic offers services for preclinical and clinical drug development. Celonic applies the highly sensitive electrochemiluminescence technology (ECL) in order to determine pharmacokinetics, pharmacodynamics or toxicology. With the help of ECL, even native levels of biomarkers can be detected. Multiplex assays with up to 10 analytes are available. Furthermore, Celonic applies cell-based assays in order to measure cytotoxicity (ADCC, CDC), apoptosis etc.



CEVEC's superior protein expression technologies CAP® and CAP-T® are designed for stable and transient protein production and achieve highest protein yields with authentic human glycosylation patterns.

The immortalized cells are derived from primary human amniocytes and meet highest ethical standards. Already adopted to serum-free growth conditions, they can be

very efficiently transfected with commercially available transfection reagents and are optimized to grow in a variety of flask/wave formats up to large-scale processing in bioreactors.

Name	Cevec Pharmaceuticals GmbH
Address	Gottfried-Hagen-Str. 62
Postal Code/City	51105 Cologne
Fon	+49-221-46020-800
Fax	+49-221-46020-801
Email	lichtenberger@cevec-pharmaceuticals.com
Internet	www.cevec-pharmaceuticals.com
Employees	18
Founded (year)	2001



Charles River Biopharmaceutical Services is a service provider of quality control analysis for biopharmaceutical drugs.

The company provides services ranging from cell bank testing, viral and TSE safety studies to characterization of the final product itself, lot release testing and stability studies.

Charles River's modern laboratories are located in Germany in Erkrath and Cologne. The German sites employ a multidisciplinary team of more than 130 staff.

The company was formerly known as NewLab BioQuality GmbH and was acquired by the Charles River group in August 2008.

Name	Charles River Biopharmaceutical Services GmbH
Address	Max-Planck-Str. 15a
Postal Code/City	40699 Erkrath
Fon	+49-211-9255-300
Fax	+49-211-9255-333
Email	newlabinfo@crl.com
Internet	www.criver.com
Employees	130
Founded (year)	1993



Chimera Biotec is the leading provider of immunoPCR assay developments based on the Imperacer® technology.

The company focuses on customised assay development services and products.

Chimera Biotec develops, manufactures and markets ultra-sensitive Immuno-assays

for pharmacokinetics, pharmacodynamics, immunogenicity, QC, stability testing and biomarkers.

Name	Chimera Biotec GmbH
Address	Emil-Figge-Str. 76a
Postal Code/City	44227 Dortmund
Fon	+49-231-9742-840
Fax	+49-231-9742-844
Email	info@chimera-biotec.com
Internet	www.chimera-biotec.com
Employees	20
Founded (year)	2000

Name	Cibus Biotech GmbH
Address	Amselweg 1
Postal Code/City	33378 Rheda-Wiedenbrueck
Fon	+49-5242-40556-0
Fax	+49-5242-40556-270
Email	info@cibus-biotech.de
Internet	www.cibus-biotech.de
Employees	6
Founded (year)	2001



or paper industry. Focus is analysis and product development to identify e.g. animal species, species of plants, GMO, allergens.

Main activities of the CIBUS Biotech are the development and application of molecular analyses for the examination of processed food, feed, or their single components as well as other products from pharmacological, cosmetic, paint

Name	Institut für Innovationstransfer Biotech (ITT)
Address	Universitaetsstrasse 25 University of Bielefeld
Postal Code/City	33615 Bielefeld
Fon	+49-521-100-775
Fax	+49-521-102-313
Email	service@iit-biotech.de
Internet	www.iit-biotech.de
Employees	36
Founded (year)	1995



established custom Sanger sequencing, Shotgun- and Fosmid-library production and DNA-amplification, -cloning or -purification. 'Next generation sequencing' has been added to our services as well.

These high-throughput techniques performed by the Roche GS 454 or by the Illumina GA IIx system can be offered combined with a powerful lab & bioinformatic pipeline providing full service tasks like genomic assembly, gap closure and annotation.

The Institut für Innovationstransfer GB Biotech (IIT Biotech) offers integrated genomic services. For many years the IIT Biotech has

Name	InterMed Discovery GmbH
Address	Otto-Hahn-Strasse 15
Postal Code/City	44227 Dortmund
Fon	+49-231-9742-6060
Fax	+49-231-9742-6061
Email	info@intermed-discovery.com
Internet	www.intermed-discovery.com
Employees	33
Founded (year)	2006



InterMed Discovery is a world class natural product lead-discovery company, driving innovation through the generation of novel product candidates for the life science, food and cosmetics industries.

Using IMD BIOPROFILING® and NPSilico®, two of the most powerful validated natural product discovery engines, InterMed Dis-

covery generates proprietary product pipelines of early stage pharmaceuticals and functional ingredients and also supports partners in research and lead generation. IMD has strategic cooperations with Cognis, Axxam, Biotropics Malaysia Berhad and several more companies.

Lonza

Lonza is one of the world's leading suppliers to the pharmaceutical, healthcare and life science industries. Its products and services span its customers' needs from research to final product manufacture.

At the site in Cologne, Lonza develops and commercializes non-viral gene transfer products for primary cells and difficult-to-transfect cell lines. These cells are im-

portant model systems for both basic and clinical research as they more accurately reflect the condition and behavior of cells within an organism when compared to commonly used laboratory cell lines.

With the specially developed Amaxa® Nucleofector® Technology, the functionality of different genes can now be analyzed in biologically relevant cell types. These results are used to more efficiently identify new targets for pharmaceuticals and therapies.

Name	Lonza Cologne AG
Address	Nattermannallee 1
Postal Code/City	50829 Cologne
Fon	+49-221-99199-0
Fax	+49-221-99199-111
Email	info.cologne@lonza.com
Internet	www.lonza.com
Employees	114
Founded (year)	1998



Miltenyi Biotec

Miltenyi Biotec was founded in 1989. The company mission is to improve scientific understanding and medical progress by providing products and services for cellular therapies. With approx. 1100 employees in 18 countries, Miltenyi Biotec develops, manufactures, and commercializes innovations for both research and clinical applications.

The portfolio provides integrated solutions for all areas covering sample preparation, cell separation, cell culture, flow cytometry, and molecular analysis. Visit www.miltenyibiotec.com to learn more.

Miltenyi Biotec develops, manufactures, and sells more than 1,500 products and services, including magnetic particles, instruments, reagents and separation columns for specific cell isolation, sterile solutions and special culture media, recombinant APIs, biopharmaceuticals, cell therapeutics, and biological adsorbers for blood/plasma treatment.

Name	Miltenyi Biotec GmbH
Address	Friedrich-Ebert-Str. 68
Postal Code/City	51429 Bergisch Gladbach
Fon	+49-2204-83060
Fax	+49-2204-85197
Email	macs@miltenyibiotec.de
Internet	www.miltenyibiotec.com
Employees	1,100 worldwide
Founded (year)	1989



PlasmidFactory is relieving the scientist of the daily routine tasks. In its laboratories the company is producing high-quality plasmid DNA according to individual customer requirements.

Besides contract manufacturing plasmid DNA, PlasmidFactory is also offering

the production of minicircle DNA as well as gene-synthesis and gene-optimisation. The so-called 'In Stock products' are complementing the product portfolio: these plasmids are always in stock and are usually shipped within 48 hours of order.

PlasmidFactory's research and development as well as its complete service branches are based in Germany. With various projects sponsored by the German Federal Ministry of Education and Research (BMBF) plus European research cooperations, PlasmidFactory is the driving force in the development of gene vectors.

Name	PlasmidFactory GmbH & Co. KG
Address	Meisenstr. 96
Postal Code/City	33607 Bielefeld
Fon	+49-521-2997-350
Fax	+49-521-2997-355
Email	www.plasmidfactory.com
Internet	info@plasmidfactory.com
Employees	16
Founded (year)	2000

Name	Protagen AG
Address	Otto-Hahn-Str. 15
Postal Code/City	44227 Dortmund
Fon	+49-231-9742-6300
Fax	+49-231-9742-6301
Email	info@protagen.de
Internet	www.protagen.de
Employees	40
Founded (year)	1997

we move ideas

PROT@GEN®

Protagen AG, located in Dortmund, Germany, is an international leading specialist in diagnostics and GMP-compliant protein analysis.

The company has more than 10 years of experience in applying the most advanced technologies to support drug discovery and drug development processes. Protagen serves customers in all areas of Life

Sciences. The innovations of Protagen are UNlarray®, a technology platform for the development of novel serum based diagnostics, as well as UNlchip®, a versatile product family of protein microarrays for faster development of antibodies.

Protagen is successfully applying the technology for its internal R&D pipeline, publicly funded projects, e.g. cNeupro, EUCAAD, LipidomicNet, BioChancePlus, HighTech-NRW, DBU, Oncotyrol and CLIB²⁰²¹, as well as in cooperation with biopharmaceutical companies worldwide.

Name	Qiagen GmbH
Address	Qiagen Str. 1
Postal Code/City	40724 Hilden
Fon	+49-2103-290
Fax	+49-2103-2922-000
Internet	www.qiagen.com
Employees	3,500 worldwide
Founded (year)	1984



QIAGEN is the leading global provider of sample and assay technologies. Sample technologies are used to isolate and process DNA, RNA and proteins from biological samples. Assay technologies are used to make such isolated bio-molecules visible for subsequent analysis. QIAGEN's portfolio

contains more than 500 products covering pre-analytical preparation of biological samples, diagnostics assays as well as instruments for the automation of entire workflows from sample to result. These products are provided to molecular diagnostics laboratories, academic researchers, pharmaceutical and biotechnology companies, and applied testing customers for purposes such as forensics, animal or food testing and pharmaceutical process control.

QIAGEN's assay technologies include one of the broadest panels of molecular diagnostic tests available worldwide.

Name	Squarix GmbH biotechnology
Address	Elbestr. 10
Postal Code/City	45768 Marl
Fon	+49-2365-9152-78
Fax	+49-2365-9152-54
Email	info@squarix.de
Internet	www.squarix.de
Employees	7
Founded (year)	1992

squarix
biotechnology

Squarix GmbH is a privately-held primary manufacturer of high purity Discovery Chemicals and Immunoreagents.

Since 1992, Squarix produces a broad product line of compounds that include innovative building blocks, reactive intermediates, natural products and derivatives,

screening compounds for drug discovery industry and reagents for life science applications comprising antibodies, metabolic intermediates, fluorescent dyes & probes and different affinity matrices for proteins and cells.

Moreover, Squarix is a custom producer of polyclonal and monoclonal antibodies for biomedical research and offers all type of immunoanalytical services in the field of antibody technology.



vivo Science is a privately held CRO for pre-clinical studies focussed on the immune system. Recently, all regulatory agencies very much enforce the testing of immunotoxicity (ICH-S8) and immuno-

genicity (ICH-S6) of new drug candidates, especially if derived from biotechnology. In addition, vivo Science can also include any immunological test into standard toxicity and related studies.

We will provide GLP and GMP compliant studies by validated protocols, or we will assist you in setting up a customized test program for your special question.

Name	vivo Science GmbH
Address	Fabrikstr. 3
Postal Code/City	48599 Gronau
Fon	+49-2562-8170-0
Fax	+49-2562-8170-19
Email	info@vivoscience.de
Internet	www.vivoscience.de
Employees	17
Founded (year)	2001



XanTec bioanalytics specializes in biosensors and bionano coatings.

The company's core competence are bioinert and bioactive nanocoatings for biomedical and bioanalytical applications. Products are SPR biosensor systems, SPR or other biosensor chips and coated slides for protein and DNA microarrays.

Name	XanTec bioanalytics GmbH
Address	Merowingerplatz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-9936-4744
Fax	+49-211-9936-4746
Internet	www.xantec.com
Employees	5
Founded (year)	1997



Health and Medicine (including Animal Health)



AiCuris

Anti-infective Cures

AiCuris (name derived from 'anti-infective cures') is a privately held company located in Wuppertal, Germany.

It is a specialist for infectious diseases and devoted to research and clinical development of novel, resistance-breaking drugs. Indications are HCMV, Herpes Simplex,

Hepatitis B, HIV and Hepatitis C as well as Gram positive and Gram negative bacterial infections in hospitals.

Furthermore, the portfolio comprises two immune modulators. It's experienced management team with Dr. Holger Zimmermann as CSO, Dr. Wilfried Schwab as Head of Chemistry & Patents and Holger Schmoll as CFO is headed by CEO Prof. Dr. Helga RübSamen-Schaeff, Bayer's former Senior Vice President and Head of Anti-Infective Research.

Name	AiCuris GmbH & Co. KG
Address	Friedrich-Ebert-Str. 475/ Building 302
Postal Code/City	42117 Wuppertal
Fon	+49-202-31763-0
Fax	+49-202-31763-1177
Email	info@aicuris.com
Internet	www.aicuris.com
Employees	65
Founded (year)	2006

arrows biomedical Deutschland carries out contract research and clinical routine analyses, and also pursues its own R&D projects.

The firm's areas of focus are primarily in the fields of molecular oncology and neurodegenerative disease. Its portfolio of molecular analytics includes RNA/DNA

services like RNA/DNA isolation, microarrays (GenExpression, Array-CGH, ChIP on chip), PCR (RT-qPCR) and bioinformatics. In the area of medical diagnostics, the portfolio includes routine analysis (testing for all clinical relevant biomarkers and the complete range of blood analysis), flow cytometry, HPLC analysis, diagnostic microarrays, detection of freely circulating tumor cells, and chemosensitive analysis.

arrows biomedical Deutschland combines state-of-the-art technology with complex data analysis to help express significant results in a format that is easy to understand.

Name	arrows biomedical Deutschland GmbH
Address	Center for Nanotechnology Heisenbergstraße 11
Postal Code/City	48149 Muenster
Fon	+49-251-53406400
Fax	+49-251-53406401
Email	raem@arrows-biomedical.com
Internet	www.arrows-biomedical.com
Employees	3
Founded (year)	2005



Bayer HealthCare

The Bayer Group is a global enterprise with core competencies in the fields of health care, nutrition and high-tech materials. Bayer HealthCare, a subsidiary of Bayer AG, is one of the world's leading, innovative companies in the health care and medical products industry and is based in Leverkusen, Germany. The company combines the

global activities of the Animal Health, Bayer Schering Pharma, Consumer Care and Medical Care divisions. Bayer HealthCare's aim is to discover, manufacture and market products that will improve human and animal health worldwide.

Name	Bayer HealthCare AG
Postal Code/City	51368 Leverkusen
Fon	+49-214-30-0
Internet	www.bayerhealthcare.com
Employees	more than 50,000
Founded (year)	1860

Name	BioCheck GmbH
Address	Vorbergweg 41
Postal Code/City	48159 Muenster
Fon	+49-251-2150-869
Fax	+49-251-2150-870
Email	office@polycheck.de
Internet	www.biocheck.de
Employees	14
Founded (year)	1999



Biocheck introduced Polycheck® Platform Technology as a tool for medical differential diagnosis.

The multiparameter test device enables a serological quantitative allergy screening on the basis of solid phase Immuno-Assay-Technology using monoclonal antibody detection; quantitative evaluation is performed by picture scanning and calculation by Biocheck Imaging Software.

Name	Biofrontera AG
Address	Hemmelrather Weg 201
Postal Code/City	51377 Leverkusen
Fon	+49-214-87632-22
Fax	+49-214-87632-90
Email	press@biofrontera.com
Internet	www.biofrontera.com
Employees	20
Founded (year)	1997



Biofrontera AG is a biopharmaceutical company specializing in the development of cosmeceuticals and drugs for the care and treatment of dermatological and inflammatory diseases. The company's goal is to establish its own dermatology marketing and sales force in selected European countries and out-licensing the distribution rights for other countries and in indications outside

dermatology. Biofrontera has applied for the European market authorization of its leading clinical drug candidate BF-200 ALA in the centralized procedure. BF-200 ALA is a gel for the photodynamic therapy of actinic keratosis. A second drug has shown good results in clinical phase II for the treatment of severe chronic urticaria. Since 2009 Biofrontera distributes Belixos, a cosmeceutical product for the regenerative care of inflamed and itchy skin, such as in atopic dermatitis or psoriasis. Biofrontera is listed in the regulated market of the Duesseldorf stock exchange under the ISIN DE0006046113.

Name	Carpegen GmbH
Address	Mendelstr. 11
Postal Code/City	48149 Muenster
Fon	+49-251-9802-320
Fax	+49-251-9802-321
Email	info@carpegen.de
Internet	www.carpegen.de
Employees	9
Founded (year)	2001



Carpegen is an innovative life science company that specializes in developing molecular diagnostic procedures based on real-time PCR and DNA chip technology. As part of collaborations, contract development, and/or research projects, Carpegen develops modern diagnostic procedures and products, for example for the sensitive

detection of infectious agents or for applications in human genetics. Among other areas, the company focuses on dental diagnostics. Carpegen has developed Carpegen® Perio Diagnostics, a powerful real-time PCR assay system that sets new standards in microbiological periodontal diagnostics. As an accepted diagnostic test, it is widely used by European dentists to optimize the treatment of periodontal disease.

Carpegen combines cutting edge technology and high quality with clinical relevance, establishing new standards in molecular diagnostics.



CellAct Pharma GmbH is a venture-backed biotech company focused on the development of innovative therapeutics for the treatment of diseases with high unmet need, especially of certain cancers and inflammatory diseases such as rheumatoid arthritis and multiple sclerosis.

CellAct's drug candidates target and modulate human molecules which have specific functions in tumour growth and immune response. The small molecule compound CAP7.1, which targets Topoisomerase, is currently in clinical Phase I/II study for the treatment of cancer.

CellAct develops antibodies against surface molecules in lymphocytes to treat cancer and inflammation. Fully human antibodies are generated in collaboration with Medarex Inc. to be tested in clinical studies for the treatment of oncological and inflammatory diseases.

Name	CellAct Pharma GmbH
Address	Otto-Hahn-Str. 15
Postal Code/City	44227 Dortmund
Fon	+49-231-9742-6350
Fax	+49-231-9742-6355
Internet	www.cellact.eu
Founded (year)	2008



CIRES is experienced in all kinds of cell culture techniques, ranging from generation of hybridomas, culture of mammalian cells in general and the culture of lines of transgenic cells. These capabilities include the production of monoclonal antibodies by hybridoma cells and of gene products of gene transfected cells.

Our specialty is the in vitro culture of cells in high densities and of monoclonal

antibodies in high concentration, applying the miniPERM Bioreactor.

CIRES has accumulated great experience in research on vaccines. Preclinical testing of adjuvants and vaccine formulations in mice is routine in our laboratory. We are able to determine in vivo the potency of vaccines in mice and in other animals. In tumor vaccinology, we have developed novel concepts and a tumor vaccination platform.

Assessment of drug-induced renal and papillary damage in the rat is another CIRES specialty.

Name	CIRES Cell & Immune Research Services
Address	Emil-Figge-Str. 76a
Postal Code/City	44227 Dortmund
Fon	+49-231-974-2880
Fax	+49-231-974-2881
Email	www.cires.de
Internet	info@cires.de
Employees	3
Founded (year)	2001



Coley Pharmaceutical GmbH in Duesseldorf is a pioneer in a class of nucleic acid drug candidates called TLR Therapeutics.

Coley has broad expertise in DNA and RNA chemistry, its biology and therapeutic development, and is applying this know how and expertise to Pfizer's nucleic acid-based therapeutics research and development ef-

forts. Pfizer's OTU encompasses research sites in Duesseldorf and Cambridge, MA, USA, and focuses on unlocking the full potential of oligonucleotide therapeutics such as for RNAi, antisense or immune modulation.

Name	Coley Pharmaceutical GmbH Pfizer Oligonucleotide Therapeutics Unit (OTU)
Address	Merowingerplatz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-20065-0
Fax	+49-211-20065-2006
Email	coley-mail@pfizer.com
Internet	www.pfizer.com
Employees	41
Founded (year)	1997

Name	Grünenthal GmbH
Address	Zieglerstr. 6
Postal Code/City	52099 Aachen
Fon	+49-241-569-0
Email Internet	service@grunenthal.com www.grunenthal.com
Employees	4,900
Founded (year)	1946



Grünenthal is passionate about being the global preferred partner in pain management for patients, health care professionals and payors.

The corporation drives innovation to achieve global market leadership in moderate to severe pain – directly and with partners. Grünenthal is an independent, family-owned German corporation with companies in 35 countries all over the world.

Founded in 1946, the corporation employs about 2,000 people in Germany and approx. 4,900 worldwide. Grünenthal achieved revenues of approximately € 881 million in 2009.

Name	Lead Discovery Center GmbH
Address	Emil-Figge-Str. 76a
Postal Code/City	44227 Dortmund
Fon	+49-231-9742-7000
Fax	+49-231-9742-7039
Email Internet	info@lead-discovery.de www.lead-discovery.de
Employees	42
Founded (year)	2008



Working in the field of pharmaceutical research, LDC transforms promising early-stage drug discovery projects into pharmaceutical Leads with initial proof-of-concept in animals. Focusing on small molecules, LDC is strictly committed to industry definitions and highest quality standards for their Lead products.

Projects originate from academic groups, primarily from Max-Planck-Institutes, as well as industry and are jointly developed in close collaboration with the project owner. LDC offers integrated core expertise in Cellular Biology, Automation & Screening, Pharmacology and Medicinal Chemistry.

Due to its unique position between basic research and industrial application, LDC is recognized as the translational link between the different needs of the involved groups bridging the innovation gap.

Name	Life & Brain GmbH
Address	Sigmund-Freud-Str. 25
Postal Code/City	53127 Bonn
Fon	+49-228-6885-100
Fax	+49-228-6885-101
Email	www.lifeandbrain.com
Employees	40
Founded (year)	2002



Life & Brain is a development-stage biomedical enterprise focusing on the discovery and development of novel strategies for the diagnosis and therapy of nervous system disorders.



ALL IT TAKES TO REGENERATE

Matricel GmbH is a life sciences company that develops and produces innovative medical class III implants and biomatrices for applications in medicine and biotechnology. Matricel serves the medical community as a collagen supplying partner and cooperates in the development of collagen containing medical products with its proven development, manufacturing and regulatory expertise. Matricel's proprietary technologies are the essential

keys to successfully produce collagen-based, biocompatible and biodegradable matrices in a wide range of modifications suitable for the cultivation with human cells in tissue engineering and regenerative medicine. Matricel's products serve different medical fields like *ACI-Maix* for tissue engineering of articular cartilage and *Remaix* as a dental membrane for guided bone regeneration. Matricel's product *Optimaix* is dedicated for research in 3D cell culture. Matricel has a promising product pipeline in further medical fields like dermal and nerve regeneration with customized scaffolds.

Name	Matricel GmbH
Address	Kaiserstr. 100
Postal Code/City	52134 Herzogenrath
Fon	+49-2407-56440
Fax	+49-2407-564410
Email	info@matricel.de
Internet	www.matricel.de
Employees	20
Founded (year)	2001



Why do PCR?
Just go FISHing!

miacom was founded with the vision to excel in the speed of identification and characterization of microorganisms. Since it's founding the company has completed the development of a novel platform technology for routine molecular testing based on enhanced "beacon-based fluorescence in-situ hybridization" (bbFISH).

miacom's tests allow the simultaneous identification of up to 14 pathogens on a

single microscope slide in 30min. Hands-on time of 10min and the accuracy of a molecular diagnostic method enable STAT as well as routine applications. Tests for bacteremia and pneumonia are commercially available – additional tests for urinary tract and cystic fibrosis-related infections will be launched in 2011.

In addition, miacom offers 30min screening tests for the most relevant resistance mechanisms such as MRSA directly from patient material.

Name	miacom diagnostics GmbH
Address	Merowingerplatz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-30155795
Fax	+49-211-30155797
Email	info@miacom-diagnostics.com
Internet	www.miacom-diagnostics.com
Founded (year)	2006



Nexigen GmbH develops innovative drugs with novel mode of action for indications with unmet medical need. Its proprietary drugs target disease mechanisms, which common technology is unable to address.

Nexigen's peptide-based drug development is aimed to close the significant gap between small molecule drugs and

therapeutic antibodies. The company currently focuses on drug discovery in several oncology projects. Its technology platform however is broadly applicable to various indications.

Nexigen is building its drug development business on selective partnerships in life science industry.

Name	Nexigen GmbH
Address	Ludwig-Erhard-Allee 2
Postal Code/City	53175 Bonn
Fon	+49-228-5368-560
Fax	+49-228-5368-5629
Internet	www.nexigen.de
Employees	15
Founded (year)	2007

Name	Orphatec Pharmaceuticals GmbH
Address Postal Code/City	Viktoriaweg 7 53859 Niederkassel
Fon Email	+49-170-9292-963 guenter.schwarz@orphatec.com
Internet	www.orphatec.com
Founded (year)	2008



Our products are aimed to treat a rare metabolic disorder affecting young children. Molybdenum cofactor deficiency is a deadly disorder, causing severe brain damage due to sulfite toxicity in the body.

Our lead product, cPMP, has received the orphan designation by the FDA and EMEA, is currently used to treat six patients

worldwide. GMP production and further pre-clinical safety programs are underway and a phase I/II study will be launched in 2011. Second generation products to treat larger patient groups are currently in pre-clinical testing.

Our team is led by experienced scientists, clinical and pharmaceutical executives with average of 10 years experience in their respective fields.

Name	Paion AG
Address Postal Code/City	Martinstr. 10-12 52062 Aachen
Fon Fax Email Internet	+49-241-4453-0 +49-241-4453-100 info@paion.com www.paion.com
Employees Founded (year)	29 2000



PAION is a biopharmaceutical company headquartered in Aachen, Germany and has a second site in Cambridge, UK.

The company is focusing on the clinical development of drug candidates for diseases or interventions for which there is a substantial unmet medical need. After proof of concept in humans the strategy is to out-

license or co-develop the drug candidates with pharma partners. Thus revenues can be generated at an early stage, decreasing development costs and risks. The company further profits from the receipt of payments for reaching clinical and commercial milestones and receiving royalties after market approval of the drugs. Further upside can be generated from co-commercialisation activities.

PAION is listed at the Frankfurt Stock Exchange (Prime Standard Regulated Market, Stock Symbol PA8, ISIN DE000A-0B65S3).

Name	PHARMA WALDHOF GmbH
Address Postal Code/City	Hansaallee 159 40549 Duesseldorf
Fon Fax Email Internet	+49-211-52602-0 +49-211-52602-22 info@pharmawaldhof.de www.pharmawaldhof.de
Employees Founded (year)	18 1974



Pharma Waldhof is proud to refer to 60 years of practical experience in Nucleic Acid biochemistry to create, to develop and to manufacture active substances, key intermediates and specific reagents for multiple applications in pharmaceuticals, diagnostics, cosmetics and nutraceuticals.

Its biochemicals are also widely used in molecular biology and chemical research.

The affiliation of Pharma Waldhof to the multinational Aceto group, our continued manufacturing collaboration with Roche Diagnostics and cooperations with selected biotechnology companies and advanced research institutions as well qualify us to flexibly respond to specific demands and developments in biochemistry, biotechnology and pharmacy of today and tomorrow."



PharmedArtis provides as a one-stop-shop complete services from gene to product and is focused on biopharmaceuticals. Using our proprietary strains of yeast or E. coli

we are able to produce your protein at high efficiency even in mammalian cells.

As spin-off of the Fraunhofer-IME we are able to produce API according to cGMP for clinical trials from phase I to III in a state-of-the-art facility. Based on a strong patent portfolio we develop innovative immunotherapeutics against cancer, auto-immune disease and inflammation.

Name	PharmedArtis GmbH
Address	Forckenbeckstr. 6
Postal Code/City	52074 Aachen
Fon	+49-241-6085-13260
Fax	+49-241-6085-13266
Email	info@pharmedartis.de
Internet	www.pharmedartis.de
Employees	10
Founded (year)	2004



Protectimmun GmbH is a biopharmaceutical company focused on research and development of drugs especially in the field of allergic and chronic inflammatory diseases. With our innovative developmental concept based on specific bacteria and

natural substances from particular farm environments we transfer highly recognised scientific findings in the field of allergy prevention into pharmaceutical applications.

Name	Protectimmun GmbH
Address	Sandkuhle 1
Postal Code/City	44879 Bochum
Fon	+49-234-3691-6714
Fax	+49-234-5886-663
Email	info@protectimmun.de
Internet	www.protectimmun.de
Employees	< 10
Founded (year)	2007



Rhein Biotech GmbH (Dynavax Europe), headquartered in Duesseldorf, Germany, a subsidiary of Dynavax Technologies Corporation, USA, develops, manufactures, licenses-out and markets biopharmaceutical products and technologies.

Name	Rhein Biotech GmbH (Dynavax Europe)
Address	Eichsfelder Str. 11
Postal Code/City	40595 Duesseldorf
Fon	+49-211-75845-0
Fax	+49-211-75845-180
Email	info@rheinbiotech.de
Internet	www.rheinbiotech.de
Employees	55
Founded (year)	1985

Name	SanguiBioTech GmbH
Address	Alfred-Herrhausen-Str. 44
Postal Code/City	58455 Witten
Fon	+49-2302-915200
Fax	+49-2302-915191
Email	info@sangui.de
Internet	www.sangui.de
Employees	6
Founded (year)	1995



SanguiBioTech GmbH engages research and development of pharmaceutical, medical and cosmetic products. Many of their technologies are patented and unique.

Name	SCT Spinal Cord Therapeutics GmbH
Address	Max-Planck-Str. 15a
Postal Code/City	40699 Erkrath
Fon	+49-211-6178-510
Fax	+49-211-6178-5150
Internet	www.sctpx.com
Employees	10
Founded (year)	2001



SCT Spinal Cord Therapeutics GmbH formerly Neuraxo Biopharmaceuticals GmbH, a biopharmaceutical company, is focusing on the treatment of nervous system injuries.

Name	Spintec Engineering GmbH
Address	Kurbrunnenstr. 22
Postal Code/City	52066 Aachen
Fon	+49-241-559418-0
Fax	+49-241-55941869
Internet	www.spintec-engineering.de
Employees	10
Founded (year)	2004



Spintec Engineering develops bioresorbable silk devices for applications in regenerative medicine.

The company's product pipeline comprises devices with and without integrated biological molecules such as growth factors which confer therapeutic efficacy to the

device through release or presentation of biological molecules at the site of implantation.

Target indications are chronic wound care, bone regeneration, plastic surgery, dermatology, ophthalmology and neurosurgery.

TaconicArtemis

TaconicArtemis is the internationally leading company in the fields of mouse genetics/-functional genomics, mouse- and rat model generation.

Our areas of activities are: mouse models for target/compound validation, phenotyping, compound profiling, mouse disease models, transgenic rat models, predictive ADMET, KinaseSwitch, RNAi in vivo.

Name	TaconicArtemis GmbH
Address	Neurather Ring 1
Postal Code/City	51063 Cologne
Fon	+49-221-96453-0
Fax	+49-221-96453-21
Email	services@taconicartemis.com
Internet	www.taconicartemis.com
Employees	100
Founded (year)	1998



new ways, notably chemistry and biology, so that they can leverage the potential of these two disciplines, as well as illuminate the biological pathways involved in severe diseases.

With a unique combination of expertise in biology and chemistry, UCB is a global biopharma focusing on severe diseases in two therapeutic areas – CNS and Immunology. UCB also has a selective presence in primary care. UCB is connecting science in

Name	UCB Pharma GmbH
Address	Alfred-Nobel-Str. 10
Postal Code/City	40789 Monheim
Fon	+49-2173-4848-48
Fax	+49-2173-4848-41
Email	customerservice@ucb.com
Internet	www.ucb.de
Founded (year)	1928 (Belgium)



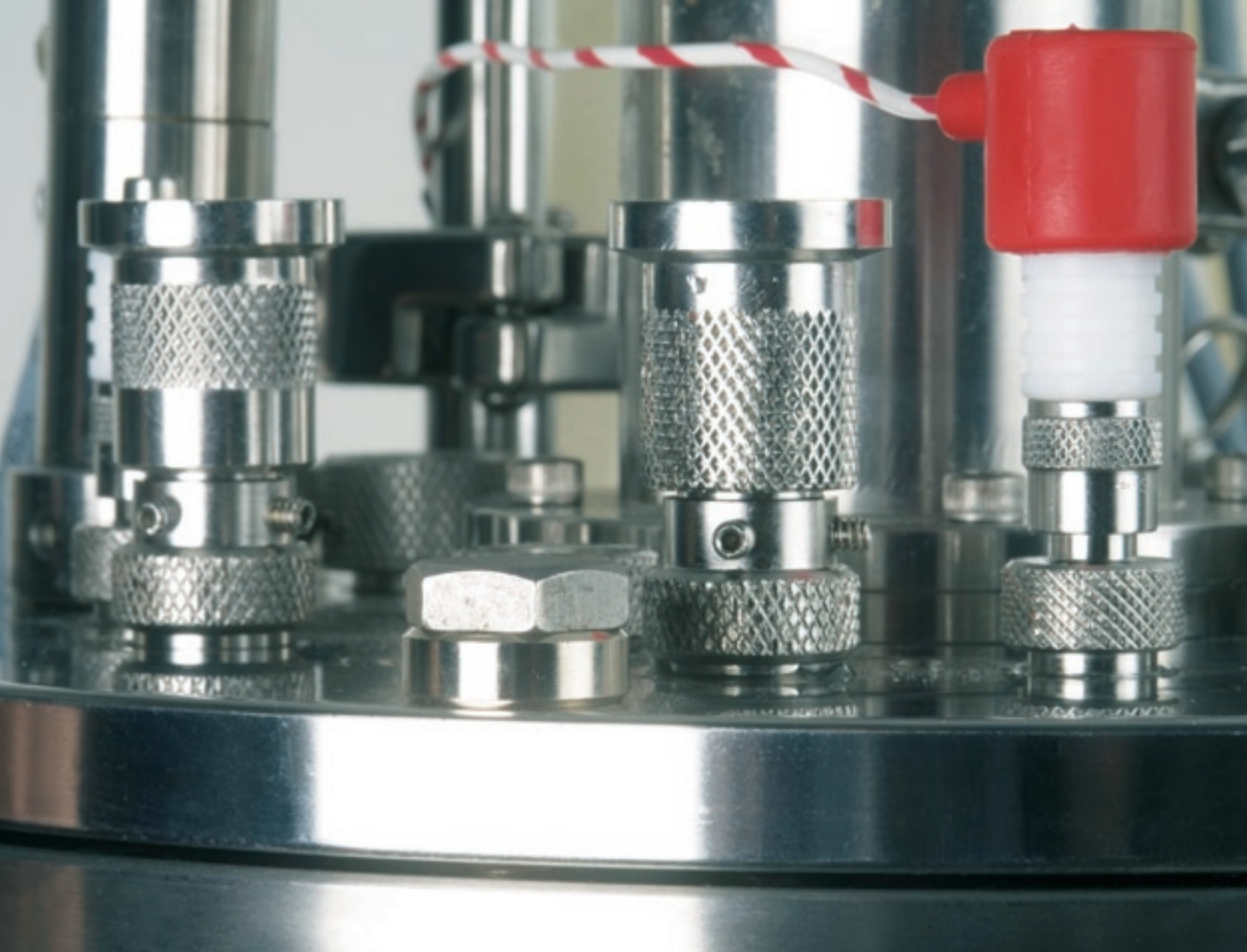
Warburg-Glycomed GmbH Reprogramming Cancer Cells

Warburg Glycomed is focussed on the development of small molecules which regulate the specific energy metabolism of tumor cells.

Warburg's lead compound is suppressing specific key enzymes of the glycolytic pathway and the TCA cycle. Due to its selectivity there are no considerable side effects while showing very promising efficacy data in various cancer types in animals.

Because this Mode of action is different from traditional approaches the drugs might be used as first-line therapy as well as adjuvant for existing drugs. Warburg Glycomed is looking for possible development collaborations in selected indications fields of oncology, inflammatory and autoimmune diseases.

Name	Warburg Glycomed GmbH
Address	Max-Planck-Str. 15A
Postal Code/City	40699 Erkrath
Fon	+49-211-617-851-11
Fax	+49-211-617-851-51
Email	witte@warburg-glycomed.de
Internet	www.warburg-glycomed.de
Employees	4
Founded (year)	2007



Industrial Biotechnology



Autodisplay Biotech GmbH is a spin-off from the Heinrich Heine University Duesseldorf.

The core business of the company is the development and out-licensing of own intellectual property as well as the production of

selected biocatalysts and bioanalysis tools. Autodisplay Biotech also acts as a service provider for es-tablished companies.

The Autodisplay system provides striking advantages when used to express a recombinant protein at the surface of Escherichia coli. Autodisplay technology therefore enables interesting, cost efficient applications in the fields of biocatalysis, drug discovery, bioanalytics, small molecule and protein drugs.

Name	Autodisplay Biotech GmbH
Address	Merowinger Platz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-9945-9609
Email	info@autodisplay-biotech.com
Internet	www.autodisplay-biotech.com
Employees	4
Founded (year)	2008



The Bioreact GmbH develops and sells innovative process tools and provides services for improved energy and material use of renewable raw materials.

Name	Bioreact GmbH
Address	Muelheimer Str. 26 Gebäude 159
Postal Code/City	53840 Troisdorf
Fon	+49-2241-8545-01
Fax	+49-2241-8545-03
Email	info@bioreact.de
Internet	www.bioreact.de
Employees	30
Founded (year)	2000

bitop

Extremolytes for Life

bitop AG is a biotechnology company developing and commercializing health care and consumer care products based on natural compounds responsible for the stress resistance of extremophilic microorganisms, the Extremolytes.

Extremolytes protect microorganisms from extreme environmental conditions.

They have therefore an enormous application potential for medical devices in the field of asthma/COPD, allergy and dermatology.

Name	bitop AG
Address	Stockumer Str. 28
Postal Code/City	58453 Witten
Fon	+49-2302-91440-0
Fax	+49-2302-91440-10
Email	office@bitop.de
Internet	www.bitop.de
Employees	40
Founded (year)	1993

Name	Cilian AG
Address	Johann-Krane-Weg 42
Postal Code/City	48149 Muenster
Fon	+49-251-6203-114
Fax	+49-251-6203-116
Email	info@cilian.de
Internet	www.cilian.de
Employees	14
Founded (year)	2001



Cilian AG is a biotechnology company developing and marketing a novel expression system. The company uses a species of ciliate, a eukaryotic single-cell organism, for the production of enzymes and therapeutic proteins.

Name	Direvo Industrial Biotechnology GmbH
Address	Nattermannallee 1
Postal Code/City	50829 Cologne
Fon	+49-221-47448-0
Fax	+49-221-47448-111
Email	info@direvo.com
Internet	www.direvo.com
Employees	40
Founded (year)	2008



Direvo Industrial Biotechnology GmbH operates one of the world's leading platforms for the discovery, development and scale up of enzymes and strains.

As a spin-off Direvo Biotech AG, Direvo Industrial Biotechnology GmbH focuses on leveraging its proprietary technologies and industrial applications such as Food & Feed and Biorefineries.

Developing industrial enzymes, fermentation systems and starter cultures, the company will be a significant contributor to the future development of environmentally friendly products and less resource demanding production technologies.

Name	evocatal GmbH
Address	Merowingerplatz 1a
Postal Code/City	40225 Duesseldorf
Fon	+49-211-15760-950
Fax	+49-211-15760-959
Email	info@evocatal.com
Internet	www.evocatal.com
Employees	17
Founded (year)	2006



evocatal develops and produces biocatalysts for the chemical and pharmaceutical industry. Performing contract research (CR) or producing its own enzymes, evocatal continuously strives to make its customer's business easier.

Our team consists of highly skilled scientists and engineers with extensive backgrounds in molecular biotechnology

and industrial chemistry. Our facilities meet biosafety level 1 and 2 standards. Enzymes and processes can be developed and produced in volumes of up to commercial scale.

Furthermore, evocatal actively contributes to international research projects and scientific networks, being always up-to-date on the latest developments in research and technology. The company has co-initiated the German IWBio (Industrial Association Biotechnology) as well as CLIB²⁰²¹ (Cluster industrial biotechnology).



Evonik Industries is the creative industrial group from Germany. In our core business of specialty chemicals, we are a global leader.

In addition, Evonik is an expert in power generation from hard coal and renewable energies, and one of the largest private residential real estate companies in Germany. In the area of industrial biotechnology the

Science-to-Business Center Biotechnology by Creavis seeks to future-proof Evonik chemicals' core business by conceiving new biotechnological processes and products. It focuses on developing sustainable production processes such as fermentation and biocatalysis and synthesizing bio-based materials that possess superior properties or a significant cost advantage.

The center devotes its research to the development of high-performance polymers, as well as the manufacture of ingredients for cosmetics, such as anti-aging products.

Name	Evonik Industries AG Creavis Technologies & Innovation
Address	Paul-Baumann-Str. 1
Postal Code/City	45764 Marl
Fon	+49-2365-494666
Fax	+49-2365-497110
Internet	www.evonik.com www.creavis.com
Employees	about 39,000
Founded (year)	2007



GEN-IAL® is an innovative biotechnology company, since more than 12 years working in the fields of biomolecular analytics and contract research. Our focus is on the DNA based detection of microorganism, GMO, allergens, animal- and plant species especially in food, feed and seed, as well as in non food materials (e.g.. pharmaceutica, cosmetics,..). Best quality and customers satisfaction

have top priority. Our ambition is to offer fast, reliable and cost-effective analysis for our clients. Integrity and discretion are self evident. The benchmark for quality is defined by the international official standards (ISO/EN/DIN or §64 LFGB (German food and feed law)) and our responsibility for independent and neutral accomplishment of our services. GEN-IAL develops kits for DNA-extraction, GMO-detection and quantification, detection of spoiling microorganism in beverages, detection of allergens and animals (brands: genControl, First-Beer, First-DNA, First-PCR, Simplex).

Name	GEN-IAL GmbH
Address	Muelheimerstrasse 26, Geb. 159
Postal Code/City	53840 Troisdorf
Fon	+49-2241-2522980
Fax	+49-2241-2522989
Email	info@gen-ial.de
Internet	www.gen-ial.de
Employees	8
Founded (year)	1998



Henkel operates worldwide with leading brands and technologies in three business areas: Laundry & Home Care, Cosmetics/Toiletries and Adhesive Technologies. Founded in 1876, Henkel holds globally leading market positions both in the consumer

and industrial businesses with well-known brands such as Persil, Schwarzkopf and Loctite.

Henkel, headquartered in Duesseldorf / Germany, has about 50,000 employees worldwide and counts among the most internationally aligned German-based companies in the global marketplace. It reported sales of 13,573 million euros and adjusted operating profit of 1,364 million euros in fiscal 2009. Henkel's preferred shares are listed in the German stock index DAX and the company ranks among the Fortune Global 500.

Name	Henkel AG & Co. KGaA
Address	Henkelstr. 67
Postal Code/City	40191 Duesseldorf
Fon	+49-211-7970
Fax	+49-211-7984-008
Internet	www.henkel.com
Employees	50,000 worldwide
Founded (year)	1876

Name	m2p-labs GmbH
Address	Forckenbeckstr. 6
Postal Code/City	52074 Aachen
Fon	+49-241-608513-120
Fax	+49-241-608513-123
Email	info@m2p-labs.com
Internet	www.m2p-labs.com
Employees	7
Founded (year)	2005



m2p-labs is a leading biotechnology company focused on microreaction solutions for screening and bioprocess development. It empowers the biotechnology, chemical and pharmaceutical industry to increase the number and information content of cell

culture experiments. We enable our customers to conduct experiments with greater efficiency, better quality and lower costs than in other cultivation systems. The BioLector technology facilitates screenings and improves bioprocess development at your site. Based on its technology the company runs a fully automated in-house screening platform for contract research and high throughput protein expression. The company advises in cellular screenings, small scale fermentation and the design of automated screening processes based on standard or customized liquid handling platforms.

Name	multiBIND biotec GmbH
Address	Gottfried-Hagen-Str. 62
Postal Code/City	51105 Cologne
Fon	+49-221-2780-211
Fax	+49-221-2780-213
Email	info@multibind.de
Internet	www.multibind.de
Employees	4
Founded (year)	2005



multiBIND develops innovative decontamination solutions for e.g. molecular biology researchers and the healthcare industry. Core technology is bioDECONT®, a solution system to generate new disinfectants and decontamination agents for hospitals,

laboratories and other industries. Currently bioDECONT® is the only agent that in addition to the effective killing of microorganisms also accomplishes safe and complete degradation of their genetic material (DNA/RNA). Besides its highly efficient antimicrobial action and decontamination properties, bioDECONT® is nontoxic for humans, non-corrosive and free of organic solvents or other hazardous chemicals. multiBIND pursues a partnering strategy by developing new applications for bioDECONT® together with partners from suitable industry sectors. We are open for licences in several applications.

Name	W42 Industrial Biotechnology GmbH
Address	Lipperweg 192
Postal Code/City	45772 Marl
Fon	+49-2365-9246-772
Email	info1@w42biotechnology.de
Internet	www.w42biotechnology.de
Employees	3
Founded (year)	2005



W42 GmbH is your partner for enzyme production and process development.

We offer: High performance heterologous protein production in *Pichia sp.* Wide range of different strains and promoters – best choice for your project.

Methanol dependent and Methanol independent high yield protein production.

Complete processes are offered including: strain development – fermentation – DSP – enzyme immobilisation.

Since 2005 W42 GmbH has carried out many successful projects for industrial partners in Europe and P.R. China.

Several improved strains are running on industrial scale for production of technical enzymes.



Enzyme Development & Supply

X-Zyme Biotechnology is a German research-based enzymes and chiral intermediates company for the development and

Supply of innovative enzymes and chiral products.

The development program has generated an extensive portfolio of enzyme libraries, chiral intermediates and single-enantiomer form of drugs, including chiral Alcohols, Diols and Amins.

Name	X-Zyme GmbH
Address	Merowingerplatz 1a Life Science Center
Postal Code/City	40225 Duesseldorf
Fon	+49-211-339-8946
Fax	+49-211-3367-9669
Email	web@x-zyme.com
Internet	www.x-zyme.de
Employees	9
Founded (year)	2001





Agrobiotechnology



Bayer CropScience

for non-agricultural applications. Bayer CropScience has a global workforce of 18,700 and is represented in more than 120 countries.

Bayer CropScience AG, a subsidiary of Bayer AG with annual sales of about EUR 6.5 billion (2009), is one of the world's leading innovative crop science companies in the areas of crop protection, non-agricultural pest control, seeds and traits.

The company offers an outstanding range of products and extensive service backup for modern, sustainable agriculture and

Name	Bayer CropScience
Address Postal Code/City	Alfred-Nobel-Str. 50 40789 Monheim
Fon Internet	+49-2173-38-0 www.bayercropscience.com
Employees Founded (year)	18,700 1863



of our world's natural resources such as water and energy.

Monsanto Company is a leading global provider of technology-based solutions and agricultural products that improve farm productivity and food quality. Monsanto remains focused on enabling both small-holder and large-scale farmers to produce more from their land while conserving more

Name	Monsanto Agrar Deutschland GmbH
Address Postal Code/City	Vogelsanger Weg 91 40470 Duesseldorf
Fon Fax Internet	+49-211-3675-248 +49-211-3675-333 www.monsanto.de
Employees Founded (year)	70 1901



The company offers already within the mycological product range several self-developed mycorrhiza-inoculi. On short and medium-term the company MykoMax GmbH would development new drugs from medicinal effective mushrooms for the pharmaceutical use.

Thereby the company uses a self-developed method for the extraction of the active ingredients in the mushrooms.

The company MykoMax was created in October 1999 in the legal form of a limited company (GmbH). The enterprise article of the society is the study, development and production of biotechnology products on the basis of fungi.

Name	MykoMax GmbH
Address Postal Code/City	Flieth 39 42327 Wuppertal
Fon Fax Email Internet	+49-202-3171-3220 +49-202-3171-3210 info@mykomax.de www.mykomax.de
Employees Founded (year)	2 1999

Name	Phytowelt GreenTechnologies GmbH
Address Postal Code/City	Koelsumer Weg 33 41334 Nettetal
Fon	+49-2162-77859
Fax	+49-2162-89215
Email Internet	contact@phytowelt.de www.phytowelt.com
Employees Founded (year)	30 1998



As worldwide operating company Phytowelt GreenTechnologies links plant science and industrial biotechnology.

They identify, isolate and express genes encoding plant enzymes with new activities for industrial fermentation processes.

Phytowelt processes a unique and wide-ranging service to gain added value in and out of plants. The service package consists of following modules:

- phytomining to take advantage of plant metabolites and enzymes for industrial biotechnology
- phytoengineering to modify plant genomes and
- phytodiversity to make use of biodiversity to generate improved plants via somatic hybridisation.

Name	Plant Science Services GmbH
Address Postal Code/City	Heerstr. 49 49492 Westerkappeln
Fon	+49-5404-9579-270
Fax	+49-5404-9579-279
Email Internet	info@plantservice.de www.plantservice.de
Founded (year)	1999



Plant • Science • Services

Plant Science Services GmbH is a modern micro propagation laboratory.

They develop, trade and produce young plants for horti- and agriculture. They also offer services around plant pathology

Name	Saaten-Union Biotec GmbH
Address Postal Code/City	Hovedisser Str. 92 33818 Leopoldshoehe
Fon	+49-5208-9504-92
Fax	+49-5208-9599-175
Email	info@saaten-union-biotec.com
Internet	www.saaten-union-biotec.com
Employees Founded (year)	57 1984



Saaten-Union Biotec offers a comprehensive range of technologies in a broad range of important agricultural species.

The development of new varieties is strongly build upon innovation. Application of tissue culture technologies and molecular marker applications is routinely used in a wide range of crops and for a significant number of breeding traits.

Anther culture and isolated microspore culture are offered in barley, triticale and rapeseed. Wheat doubled haploids are produced by interspecific hybridization and embryo rescue. Flow cytometry is established too.



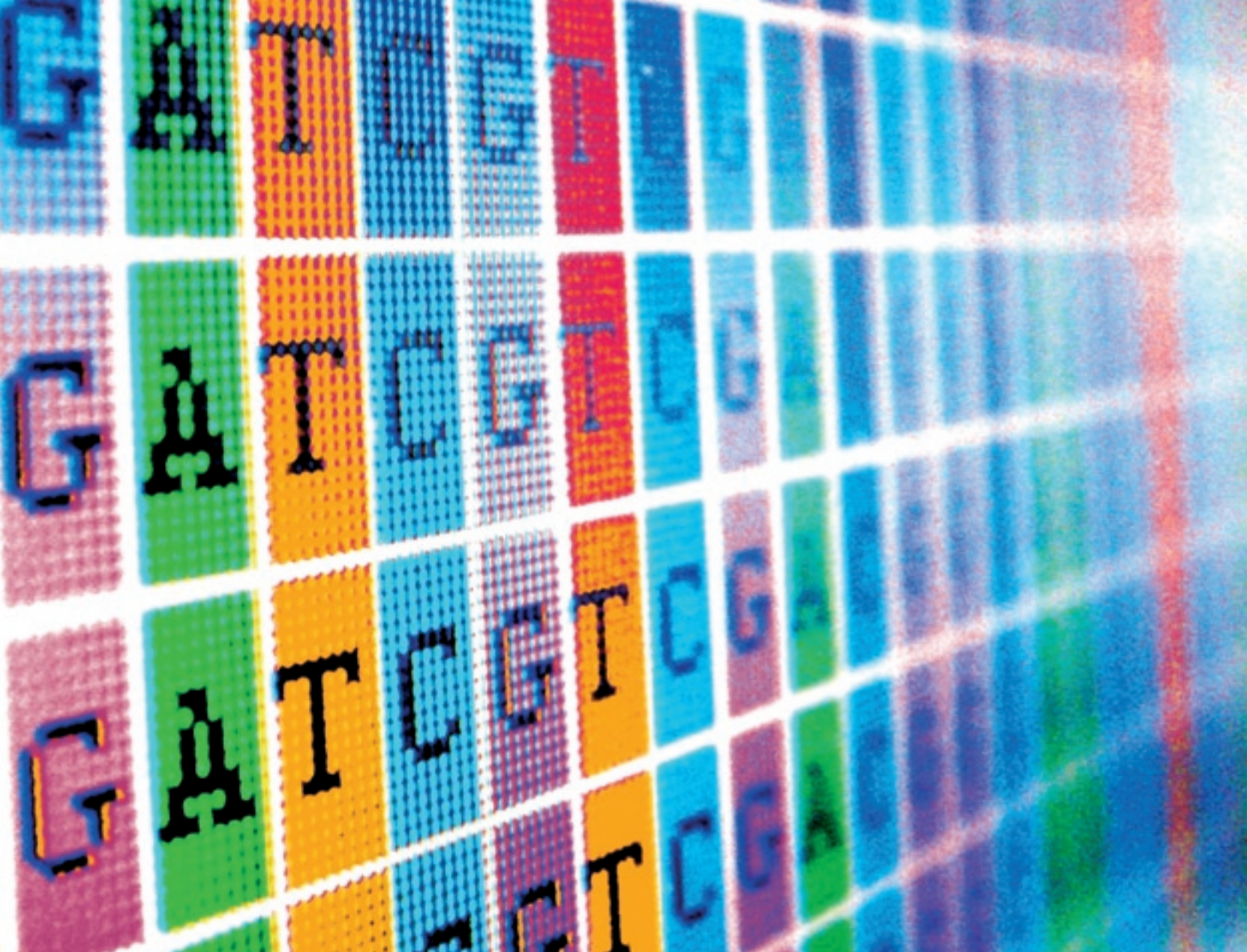
The plant breeding company W. von Borries-Eckendorf is a partner in the concerns SAATEN-UNION GmbH Rapool-Ring GmbH and SAATEN-UNION Biotec GmbH.

Founded in 1849, the plant breeding house immediately made an international name for itself with the 'Eckendorfer' fodder beet.

The company based in Lippe has been in business for more than 160 years now, and throughout its existence has acquired an excellent reputation as a breeding ground for unique new varieties. Today, its experts focus on the area of wheat and barley.

Name	W. von Borries-Eckendorf GmbH & Co. KG
Address	Hovedisser Str. 92
Postal Code/City	33818 Leopoldshoehe
Fon	+49-5208-912-530
Fax	+49-5208-912-549
Email	info@wvb-eckendorf.de
Internet	www.wvb-eckendorf.de
Employees	39
Founded (year)	1849





Bioinformatics

informium®

Informium provides a system of markers and codes as protection against product piracy.

Physical encryption and the corresponding Informium identification system establish a new dimension in anti-counterfeiting and guarding intellectual property.

Name	Informium AG
Address	Technologiapark Friedrich-Ebert-Straße
Postal Code/City	51429 Bergisch Gladbach
Fon	+49-221 888 886-0
Fax	+49-221 888 886-19
Email	info@informium.de
Internet	www.informium.de
Founded (year)	2001





BIO.NRW Cluster Biotechnology North Rhine-Westphalia

North Rhine-Westphalia's state government has established a number of technology clusters to systematically improve NRW's strengths and talents in established industries and up-and-coming fields like biotechnology. Goal of the "ExcellenceNRW" cluster strategy is to create a favourable climate for innovation, as that is the best way to sustain the competitive edge and stimulate growth and employment in the companies that call the state their home. North Rhine-Westphalia's biotechnology cluster BIO.NRW is a central catalyst for the sustainable development of the state's biotech sector. It activates cooperation between business, research, investors and policy-makers. The cluster also promotes the strengths and achievements of biotechnology in the state.

To support young as well as already established biotech companies, BIO.NRW offers the following core competencies:

- Individual matchmaking for collaborations and partners
- Overview on all up-to-date R&D activities in industry and academia
- Profound knowledge on financing possibilities
- International promotion and marketing for NRW as biotech location
- Direct contacts to decision makers

To learn more about BIO.NRW and to stay informed about the latest bio-

tech developments in NRW please visit www.bio.nrw.de.

Further drivers in the field are dynamic local biotechnology initiatives and networks:

Bioanalytik-Muenster
www.bioanalytik-muenster.de

BioCologne
www.biocologne.de

BioIndustry
www.bioindustry.de

BioRiver
www.bioriver.org

Bio-Tech-Region OWL
www.bio-owl.de

LifeScienceNet Düsseldorf
www.lifescience-dus.de

LifeTecAachen-Jülich
www.life-tec.org

Cluster Industrial Biotechnology
www.clib2021.com

Contact BIO.NRW

Matthias Nerger
Head of BIO.NRW Office
Merowingerplatz 1
40225 Duesseldorf, Germany
Fon +49-211-385-469-9200
Fax +49-211-385-469-9220
bio.nrw@bio.nrw.de
www.bio.nrw.de



Zollverein

Glossary

Organisation for Economic Co-operation and Development (OECD)

The OECD is a unique forum where the governments of 30 democracies work together to address the economic, social and environmental challenges of globalisation.

The OECD Biotechnology Statistics, which brings together the latest available economic and activity data on biotechnology and innovation, is collected by OECD member and non-member countries.

The report builds on the extensive work of the OECD and national experts to improve the comparability of biotechnology statistics.

www.oecd.org

OECD Definitions

Biotechnology company

... is defined as a application of science and technology to living organisms, as well as parts, products and models thereof, to alter living or non-living materials for the production of knowledge, goods and services.

Dedicated biotechnology companies

... are defined as biotechnology active firms whose predominant activities involve the application of biotechnology techniques to produce goods or services and/or the performance of biotechnology R&D.

Other biotechnologically active companies

... firms that apply biotechnology techniques for the purpose of implementing new or significantly improved products or processes.

This definition excludes end users that innovate simply by using biotechnology products as intermediate inputs (for instance, detergent manufacturers that change a formulation to include enzymes produced by other firms via biotechnology techniques).

Business Areas of Activity

– Health/Medicine (including animal health)

Development of therapeutics and/or diagnostics for the field of human medicine, drug delivery, human tissue replacement.

– Agri/Agrobiotechnology

Biotech focussed on genetically modified plants, animals or microorganisms, as well as non-genetically modified plants grown using biotechnological procedures for use in agriculture or forestry.

– Industrial biotechnology

Biotechnological products and processes for the handling of waste or sewage, for chemical synthesis, for the extraction of raw materials and energy, etc.

– Non-specific application

Equipment or reagents based on biotechnological principles for research or provision of services in this field (“ancillary industry”).

Source: biotechnologie.de



BIO.NRW

Merowingerplatz 1
40225 Duesseldorf, Germany
Fon +49-211-385-469-9200
Fax +49-211-385-469-9220
bio.nrw@bio.nrw.de
www.bio.nrw.de

Ministry of Innovation, Science
and Research of the German State
of North Rhine-Westphalia
40221 Duesseldorf
www.innovation.nrw.de

www.exzellenz.nrw.de

With the “Excellence NRW” cluster strategy, North Rhine-Westphalia has set new standards for both business and innovation. The state government has made the systematic improvement of NRW’s strengths and talents an absolute priority – both in established industries and up-and-coming fields like biotechnology. It is our goal to create a favorable climate for innovation, as that is the best way to sustain the competitive edge and stimulate growth and employment in the companies that call the state home. To find out more about North Rhine-Westphalia’s cluster strategy and the 16 clusters currently in NRW’s roster, just visit www.exzellenz.nrw.de.